BIOLOGICAL STUDIES TRACKING FORM

NEPA Project Manager	Kirsten McCullough / Erin Faulkner
State or Local Government Project	State
USFWS TAILS #	02EKOK00-2019-SLI-1945
Original IPaC List	10/7/2020
Email used to request IpaC official species list	Biologist@garverusa.com
Last Updated Species List Date	Click here to enter a date.
ROW	2022
Let Date	2027
90 Day Prior to Let IpaC List	Click here to enter a date.
Duration expected	Click here to enter text.
Original Biological Assessment and Waters	Garver
and Wetlands Report Prepared By:	
Most Recent Field Date:	10/1/2020
Original Report Date:	11/6/2020
USFWS Consultation Submittal:	2/11/2021
USFWS Concurrence:	2/12/2021
Original Tracking Form Prepared by:	Elizabeth Nichols
Original Tracking Form date:	2/12/2021
Update Reason	Click here to enter text.
Updated By Whom:	Click here to enter text.
Amended USFWS Consultation Submittal:	Click here to enter a date.
Amended USFWS Concurrence:	Click here to enter a date.
Tracking Form Updated By Whom:	Click here to enter text.
Tracking Form Updated Date:	Click here to enter a date.
ADD MORE LINES AS NEEDED FOR EACH	I TIME PROJECT IS UPDATED

Form Date: November 2020

Project Name from Oracle

I-44/US-75 Interchange Reconstruction From I-244 Through Arkansas River

Project Description

Grade, Drain, Surface and Bridge

Check if any of the following is expected as part of the proposed action

Work within the OHWM is expected	\boxtimes
Project is OFF-SET alignment	\boxtimes
Project is NEW alignment	\boxtimes
Project involves NO OFF EXISTING PAVEMENT work	
Project requires new ROW (permanent &/or temporary)	\boxtimes

2. FEDERALLY LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Species	Listing Status	IPaC Check if Yes	Effect Determination for IPaC listed species
Red-cockaded Woodpecker	Endangered		Choose an item.
Whooping Crane	Endangered		Choose an item.
Gray Bat	Endangered		Choose an item.
Indiana Bat	Endangered		Choose an item.
Ozark Big-eared Bat	Endangered		Choose an item.
Neosho Mucket	Endangered		Choose an item.
Ouachita Rock Pocketbook	Endangered		Choose an item.
Scaleshell Mussel	Endangered		Choose an item.
Winged Mapleleaf	Endangered		Choose an item.
Harperella	Endangered		Choose an item.
American Burying Beetle	Threatened	\boxtimes	Final Effect Analysis and Determination covered in the BO for the final 4(d) rule
Eastern Black Rail	Threatened		Choose an item.
Piping Plover	Threatened	\boxtimes	May Affect, Not likely to adversely affect
Red Knot	Threatened	\boxtimes	No Effect
Northern Long-eared Bat	Threatened	\boxtimes	Final Effect Analysis and Determination covered
A.1	TPI		in the BO for the final 4(d) rule
Arkansas River Shiner	Threatened		Choose an item.
Leopard Darter	Threatened		Choose an item.
Neosho Madtom	Threatened		Choose an item.
Ozark Cavefish	Threatened		Choose an item.
American Alligator	Threatened		Choose an item.
Rabbitsfoot Mussel	Threatened		Choose an item.
Rattlesnake-master Borer Moth	Candidate		Choose an item.
Whooping Crane Critical Habitat	Designated		Choose an item.
Arkansas River Shiner Critical Habitat	Designated		Choose an item.
Leopard Darter Critical Habitat	Designated		Choose an item.
Neosho Mucket Critical Habitat	Designated		Choose an item.
Rabbitsfoot Critical Habitat	Designated		Choose an item.

	NEPA	Construction
	Footprint	Footprint
Number of acres within the NEPA Study Footprint	350.5	Click here to
& Construction Footprint (if known)		enter text.
Number of acres of perennial plant vegetation (ABB habitat)	82.9	Click here to
within the NEPA Footprint & Construction Footprint (if known)		enter text.
Number of acres of forested/wooded area (Ibat and NLEB habitat)	74.1	Click here to
within the NEPA Footprint & Construction Footprint (if known)		enter text.

ABB Conservation Lands adjacent	NO
Bald Eagle Assessment	May impact
Migratory Bird Assessment of	Migratory birds found nesting on transportation structures
Transportation Structures	
Migratory bird habitat assessment	nesting habitat for migratory birds will be impacted

Listed BCC may be impacted

Known nests will be impacted

Species (choose those that apply)	Seasonal Restriction Period
Bats	April 1 – November 15
Bald Eagle	September 16 – May 31
Migratory Birds: Swallows and Phoebes	March 1 – August 31
(NESTS PRESENT)	
Migratory Birds: Interior Least Tern	May 1 – August 31

Conservation Commitments

Birds of Conservation Concern

Interior Least Tern (MBTA)

ODOT Commitment: A representative from ODOT Natural Resources Program will need to attend all project development meetings, including the pre-work meeting for the project. It will be the responsibility of the Environmental Project Manager to notify the ODOT Natural Resources Program of any such meetings. All operators, employees, and contractors will be made aware of all environmental commitments, including the following Plan Notes.

ABB Commitment: Minimize habitat loss by reducing the amount of ground disturbance of suitable ABB habitat within the construction footprint to only what is necessary for project construction and document in the monitoring reports to the Service. Following construction, areas of ground disturbance outside of the safety clear zone will be revegetated with native plant species where applicable and practicable. Areas where revegetation with native plant species is not practicable will be revegetated with more traditional plantings such as solid slab sodding.

Tree Removal Minimization Commitment: In order to avoid and minimize adverse impacts to Birds of Conservation Concern and listed bat species, the removal of trees and shrubs shall be restricted to areas within the actual limits of construction, and all aspects of the project (e.g temporary work areas, alignments) will be modified to avoid tree removal, if possible, during the design of the project. Tree removal will be limited to that specified in the project plans provided to contractors.

Species Plan Notes

Non-Compliance: Failure to implement the commitments specified in the Plan Notes can result in non-compliance issues on the project. Work activities may be suspended on the project, for an undetermined duration, while working with regulators to bring the project back into compliance. The contractor will not be compensated for time lost.

Water Quality Conservation: Appropriate Best Management Practices to minimize impacts from storm water discharges and sedimentation in streams, as established by the Oklahoma Department of Environmental Quality, shall be conscientiously implemented throughout the proposed construction periods, in order to minimize any potential impacts to any listed species. The effectiveness of erosion controls shall be maintained for the duration of construction activities. Hazardous materials, chemicals, fuels, lubricating oils, and other such substances shall be stored at least 100 feet outside of the ordinary high water mark (OHWM). Refueling of construction equipment shall also be conducted at least 100 feet from the OHWMs. Sediment and erosion controls shall be installed around staging areas to prohibit discharge of materials from these sites. Construction waste materials and debris shall be stockpiled at

least 25 feet outside of the OHWMs, and these materials shall be removed and disposed of properly following completion of the project. Preventative measure must be taken to prohibit the discharge of contaminants into any surface waters.

American Burying Beetle Note: The American Burying Beetle is a large carrion burying beetle that occurs within the project limits. Artificial lighting may be used during construction for night activities if the equipment specifications outlined in Special Provision 656-5(a-b)19 for ABB are adhered to and measures to minimize use of artificial lighting have been implemented. Carcasses and all food trash shall be removed from the permanent and temporary right-of-way throughout the duration of project activities. Pollution Prevention Requirements as specified by the Oklahoma Department of Environmental Quality General Permit OKR10 for Storm Water Discharges shall be implemented when appropriate. Additionally, all equipment will be fueled, and all fuel and motor vehicle oil will not be stored within areas of native vegetation (ie. outside ABB habitat).

Bat Bridge/Culvert Seasonal Restriction Note: The northern long-eared bat is a listed bat species that occurs within the project's action area. In order to avoid and minimize adverse impacts to listed bat species, bridge/culvert repair, retrofit, maintenance, rehabilitation or demolition shall be permitted only between November 16, and March 31 (when bats are hibernating in caves). If bridge/culvert repair, retrofit, maintenance, rehabilitation or demolition during the active season (between April 1, and November 15) cannot be avoided, the Resident Engineer shall contact the ODOT Biologist to schedule a visual bat bridge inspection, prior to any bridge work. Inspection surveys can only be conducted between May 15, and August 15. If the inspection finds that bats are using the structures, all bridge/culvert repair, retrofit, maintenance, rehabilitation or demolition shall only be permitted between November 16, and March 31 (when bats are hibernating in caves).

Bald Eagle Note: The Bald Eagle nesting season in Oklahoma extends from September 16, through May 31. A Bald Eagle survey was completed for this project in November 2020. No nests were observed within the expected impact area. Survey results are valid only for the nesting season in which the survey was performed. If construction activities have begun, but are not completed by September 16, 2021 the Resident Engineer shall contact the ODOT Biologist. The ODOT Biologist shall schedule any additional surveys that may be required as soon as leaves fall off the trees (approximately November 1). Because no nests were observed during the initial survey, and it can take a pair of eagles one to three months to construct a new nest, if construction activities have begun before October 31, 2021 they may continue while additional nest search surveys are conducted after leaf-off. If construction activities have not begun by October 31, 2021 a new nest survey shall be completed by the ODOT Biologist before construction activities can begin. Nest search surveys can only be conducted when leaves are not on the trees typically between December 1st and February 28th. If nests are observed, up to a 660 foot no-work buffer shall be placed around the nest. The exact distance of the buffer zone shall be established by the ODOT Biologist in consultation with US Fish and Wildlife Services. If the buffer cannot be maintained, all clearing, external construction and landscaping activities within the buffer shall be conducted between June 1 and September 15 (outside the nesting season).

Interior Least Tern Note: Interior Least Terns are protected by the federal Migratory Bird Treaty Act. Interior Least Terns are known to nest within and downstream of the Arkansas River adjacent to the project area. The Resident Engineer shall contact the ODOT Biologist to schedule a pre-construction nesting survey during the month of June; surveys are valid for that nesting season only. If construction activities will occur during the active nesting season for this species (May 1 through August 31), a 0.25 mile no-work-zone buffer from the Ordinary High Water Mark of the Arkansas River will be established until the nesting survey can be completed. If the survey finds Interior Least Terns nesting in the area, all work within 0.25 miles of any nesting colonies will be postponed until after September 1 (the end of nesting season) and be completed by April 30, the following year.

Migratory Bird Note: Migratory birds are protected by the federal Migratory Bird Treaty Act. Many birds commonly use bridges and culverts for nesting. The nesting season for most migratory bird species extends from March 1 to August 31. Migratory bird nesting use of the I-44 Arkansas River bridges (NBI:20326 and 20580), US-75 Cherry Creek bridge (NBI:18005), US-75 bridges over W.46th St. (NBI:18254 and 18255), US-75 bridges over W 49th St. (NBI:18267 and 18268), US-75 NB Moose Creek & Skelly Dr. bridge (NBI:15831), US-75 NB Off Ramp over Mooser Creek and Skelly Dr (NBI: 15838), US-75 SB Off Ramp over Mooser Creek and Skelly Dr (NBI:15843) and the S. Olympia Ave Mooser Creek bridge (NBI:11970) was observed. Painting, repair, retrofit, rehabilitation or demolition of the existing bridges and culverts shall be conducted between September 1, and February 28, when migratory bird nests are not occupied. If painting, repair, retrofit, rehabilitation or demolition cannot be completed between September 1 and February 28, the bridges and culverts shall be protected from new nest establishment prior to March 1, by means that do not result in bird death or injury. Options include the exclusion of adult birds from suitable nest sites on or within a structure by the placement of weather-resistant polypropylene netting with 0.25-inch or smaller openings, prior to March 1. Methods other than netting must be pre-approved by the ODOT Biologist.

Although no nests were observed on many of the other structures, and many were not able to be inspected, migratory birds may occupy the structures at any time. The Resident Engineer shall contact the ODOT Biologist if any bird use of these structures is observed. If birds are observed then painting, repair, retrofit, rehabilitation or demolition of the existing bridges and culverts shall be conducted between September 1, and February 28 (when migratory bird nests are not occupied).

Waters and Wetlands Delineation Status

Original delineation

Wetlands and Ponds

Total Number of Sites	Water Body Type	Potential Jurisdiction	Acres within the NEPA
		Status	Footprint
6	Herbaceous Wetland	Likely Jurisdictional	0.69
2	Herbaceous Wetland	Unlikely Jurisdictional	0.26
1	Scrub Shrub Wetland	Likely Jurisdictional	0.01
		Total Wetlands	0.96
1	Pond	Unlikely Jurisdictional	0.11

Streams and Drainages

Total Number of sites	Water body name	USGS Designation	Potential Jurisdictional Status	Acres within the NEPA Footprint	Liner Feet within the NEPA Footprint
1	Arkansas River	mapped perennial	Likely Jurisdictional	7.13	388
1	Cherry Creek	mapped perennial	Likely Jurisdictional	0.38	505
1	Mooser Creek	mapped perennial			1,630
		8.28	2,523		
5	Tributaries to Mooser Creek	unmapped ephemeral drainages	Likely Jurisdictional	0.091	764
1	Tributary to Cherry Creek	unmapped ephemeral drainages	Likely Jurisdictional	0.01	73

Nichols, Elizabeth

From: Kreisler, Skye E <skye_kreisler@fws.gov>
Sent: Friday, February 12, 2021 1:40 PM

To: Nichols, Elizabeth

Cc: Amber McIntyre; Goins, Kassandra M

Subject: Re: [EXTERNAL] 02EKOK00-2019-SLI-1945_20210211_ODOT Tulsa JP 33788(08)(09)(10(11)

Consultation Review Package Submittal

Code: 02EKOK00-2019-I-1945

Hello Liz,

The Service has reviewed the consultation package for Oklahoma Department of Transportation's project: **Tulsa JP 33788 (08)(09)(10)(11)** - (project) I-44/US-75 interchange reconstruction.

Based on the information provided, you have determined that the project may affect, and is not likely to adversely affect the federally-listed **piping plover** (*Charadrius melodus*). The Service agrees with that determination. Potential impacts to the **American burying beetle** (*Nicrophorus americanus*) have been addressed using the biological opinion on the 4(d) rule pertaining to that species, and the Service asks that the conservation measures as articulated in the assessment, and in conjunction with the guidelines set forth by the Federal Highway Administration, be implemented and maintained. This concludes the section 7(a)(2) consultation pursuant to the Endangered Species Act of 1973 (Act; 87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) pertaining to the piping plover and the Beetle.

Potential impacts to the federally-listed **northern long-eared bat** (*Myotis septentrionalis*) have been addressed using the biological opinion on the 4(d)rule pertaining to that species, and a response was generated which is valid for one calendar year from the date on that letter. New requests for this letter must be submitted to remain valid within the project's action periods, which as described, has multiple let dates and start dates.

You have further determined that the project will have no effect to the federally-listed **red knot** (*Calidris canutus rufa*). While the **least tern** (*Sterna antillarum*) was delisted under the Act effective February 12, 2021 (86 FR 2564), the Service asks that ODOT implement and maintain appropriate measures in conjunction with guidance set forth by the Federal Highway Administration pertaining to this migratory bird species and other migratory birds.

The online project review response letter signed by the Field Supervisor is now valid, and this project may proceed accordingly. The Service asks that, within 90 days prior to construction, a new species list be obtained to see if any changes have occurred. If changes have occurred, please check with the Field Office to determine if further consultation is needed. If you have any questions, please contact the Oklahoma Ecological Services Field Office.

Sincerely,

Skye Kreisler

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service Oklahoma Ecological Services Field Office 9014 E 21st Street Tulsa, OK 74129

(571) 242-7104 Mobile

cc: Kasey Goins, Student Conservation Association Intern - U. S. Fish and Wildlife Service, Oklahoma Ecological Services Field Offic

From: Nichols, Elizabeth <elizabeth.nichols@ou.edu>

Sent: Thursday, February 11, 2021 6:04:45 PM

To: OK Project Review, FWS < OKProjectReview@fws.gov>

Cc: Amber McIntyre <amcintyre@odot.org>

Subject: [EXTERNAL] 02EKOK00-2019-SLI-1945_20210211_ODOT Tulsa JP 33788(08)(09)(10(11) Consultation Review

Package Submittal

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Elizabeth Nichols
Assistant Manager, Natural Resources Program
Oklahoma Department of Transportation
Oklahoma Biological Survey
111 E. Chesapeake
Norman, OK 73019
405.325.6802 (office)
elizabeth.nichols@ou.edu



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Division of Ecological Services 9014 East 21st Street Tulsa, Oklahoma 74129 918/581-7458 / (FAX) 918/581-7467

Online Project Review Concurrence Letter			
To:			
Project Name:			
'Eqpuwncvkqp'Eqfg<			
Dear Applicant:			
Thank you for using the U.S. Fish and Wildlife Service (Service) Oklahoma Ecological Services Field Office (ESFO) online project review process. By providing this letter in conjunction with your complete project review package, you are certifying that you have accurately completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. Concurrence with "not			

Thank you for using the U.S. Fish and Wildlife Service (Service) Oklahoma Ecological Services Field Office (ESFO) online project review process. By providing this letter in conjunction with your complete project review package, you are certifying that you have accurately completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. Concurrence with "not likely to adversely affect" determinations does not provide any exemption for violations of section 9 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA) or "take" of federally-listed species. The Federal action agency is ultimately responsible for ensuring compliance with the ESA and any take that occurs due to your proposed action would be considered a violation under section 9 of the ESA.

This letter and the enclosed project review package complete the review of your project in accordance with the ESA. This letter also provides information for your project review under the National Environmental Policy Act (National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C.4321-4347, 83 Stat. 852), as amended.

A copy of this letter and the project review package must be emailed to okprojectreview@fws.gov for this certification to be valid. This letter and the project review package will be maintained in Service records. Please allow the Oklahoma ESFO 45 days to review your information. If the Oklahoma ESFO determines that the package is not complete, or that additional coordination is necessary, we will contact your office. If, after 45 days from the date of your email submittal of your project review package, the Oklahoma ESFO has not contacted your office, consider your section 7 consultation complete.

The proposed action consists of:
Project start and completion dates:
Federal agency or federal program providing a permit, funding, grant, authorization, loan, etc. associated with the proposed project and how that agency is associated with your project:
Federal Agency/Program Point of contact (Name, phone, and email address):

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in "not likely to adversely affect/modify" determinations for listed species and critical habitat in relation to potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with determinations of "not likely to adversely affect" for listed species and critical habitat reached by proper use of this process. For projects where this particular determination is reached, additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages efforts to avoid or minimize adverse impacts to them from project effects. Some federal agencies have standing policies that grant limited protections to candidate species. Conservation of candidate species now may preclude future needs to federally list them as endangered or threatened, at which point their legal protection would become required. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. You should re-visit the Service's Information, Planning, and Conservation (IPaC) website at http://ecos/fws.gov/ipac/ within 90 days of project initiation to ensure species information is correct. If new species or critical habitat is identified, this letter is no longer valid and a new project package should be submitted to the Oklahoma ESFO.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Oklahoma is available at our website: http://www.fws.gov/southwest/es/oklahoma/>. If you have any questions, please call 918-581-7458 or send an email message to OKProjectReview@fws.gov.

Sincerely, /s/ Jonna Polk Field Supervisor Oklahoma Ecological Services Field Office

Enclosures:

1) ENTIRE PROJECT REVIEW
PACKAGE: Species Conclusion Table
IPaC Species List and Action Area map
This letter (Online Concurrence Letter)

This letter (Online Concurrence Letter)
(Optional) Additional maps

2) Other relevant project data/documents

Determination Key to the American Burying Beetle 4(d) Rule for Federal and Non-Federal Activities

This key will help you determine if your proposed project is excepted from prohibited take of the American burying beetle (ABB), as defined in the 4(d) rule under the Endangered Species Act (Act)(50 CFR 17.47(d), Federal Register Citation 85 FR 65241). If so, you will receive a certification letter from the U.S. Fish and Wildlife Service (Service) indicating that you have followed the Service's ABB 4(d) key process and that your proposed project is excepted from take prohibitions.

This is an interim key for your use until an online key is available through the Information for Planning and Consultation (IPaC) system. The ABB 4(d) rule provides protections and exceptions for the ABB only. To assess potential impacts to other federally-protected species, please continue the local Ecological Services Field Office process for consultation and technical assistance, which should include the use of IPaC.

Select one:	Federal Agency/Federal Nexus	No Federal Nexus
Project Name	::	
If this is a fed information b		has a federal nexus, fill out federal agency
Federal Age	ency Name:	
Point of Co	ntact:	
Phone #	Email	
that are actin	on-federal entity, fill out the informat g as the delegated authority for a fedo wide federal agency contact informat	
Company N	Jame:	
Point of Con	ntact:	
Phone #	Fmail	

Please follow the steps below and check all appropriate boxes:

Step A - Did the results of your IPaC resource list include the American burying beetle?

<u>Yes</u> – your project is within the *Area of Influence* of the American burying beetle. <u>Continue to Step B.</u>

<u>No</u> – your project is outside of the species current *Area of Influence*. The Action will have "No Effect" on the ABB. No concurrence or permit from the Service required. Document the IPaC species list in your files. No further consultation with the Service related to the ABB is necessary.

Step B - Will your activity *purposefully take* ABB? For example, are you capturing ABBs for research?

Yes - my activity includes purposefully taking ABBs.

- Intentional take is not excepted under the 4(d) rule. Research that involves handling ABBs does require a permit; if you are conducting research that includes capturing and handling ABBs, you should contact the U.S. Fish and Wildlife Service to apply for a permit.
- Other *purposeful take* (see Definitions below) of ABBs is prohibited. You should contact the U.S. Fish and Wildlife Service for more information. Please contact the Service's Ecological Services Field Office located nearest the project. Office contact information is provided at the end of this key.

$\underline{\text{No}}$ - my activity does not include purposefully taking of ABBs. $\underline{\text{Continue to Step } C}.$

Step C - Is the *action area* of your proposed project wholly located within one of the following Analysis Areas (see map at end of this document).

Yes:

- Southern Plains Analysis Area Continue to Step D
- Northern Plains Analysis Area <u>Continue to Step E</u>
- New England Analysis Area <u>Continue to Step F</u>

No or uncertain (if your project is near the boundary and you are uncertain if the action area is wholly within one of the above Analysis Areas, select this option.

Please contact the closest U.S. Fish and Wildlife Service Ecological Services Field Office for further guidance. Office contact information is provided at the end of this key.

<u>Step D</u> - If you have reached this Step, you have determined that your action area is located wholly within the Southern Plains analysis areas. To narrow your project down further, please answer the following question:

Is the action area wholly located <u>outside</u> of *Conservation Lands* as identified in the 4(d) rule. See map and definitions at end of this document.

<u>Yes</u> - Incidental take (see Definitions below) of ABBs is excepted from prohibitions by the final 4(d) rule in Southern Plains analysis areas outside defined Conservation Areas.

The Action is consistent with activities analyzed in the Service's Programmatic Biological Opinion for the 4(d) rule. The Action may affect the American burying beetle; however, any take that may occur as a result of the Action is <u>not prohibited</u> under the Act, Section 4(d) rule adopted for this species at 50 CFR 17.47(d), Federal Register Citation 85 FR 65241.

**Please fill out the Questionnaire at the end of this key and submit this completed form to the nearest U.S. Fish and Wildlife Service Ecological Services Field Office. The subject line in your email should read "ABB 4d Key Letter Request" **

The Service will respond by providing you a certification letter indicating that you have followed the Service's ABB 4(d) key process and that your proposed project is excepted from take prohibitions.

No or uncertain - all or portions of the Action Area are, or may be, within a defined Conservation Land.

Based on its location within a defined Conservation Land, incidental take from the proposed project <u>may not be</u> excepted under the 4(d) Rule. Please contact the closest U.S. Fish and Wildlife Service Ecological Services Field Office for further guidance. Office contact information is provided at the end of this key.

<u>Step E</u> - If you have reached this step, you have determined that your action area is wholly located within the Northern Plains analysis areas. To narrow your project down further, please answer the following question(s):

Is your proposed action considered wildlife management conducted by Federal or State government agencies?

<u>Yes</u> - the proposed action is wildlife management conducted by Federal or State government agencies?

The Action is consistent with activities analyzed in the Service's Programmatic Biological Opinion for the 4(d) rule. The Action may affect the American burying

beetle; however, any take that may occur as a result of the Action is <u>not prohibited</u> under the Act, Section 4(d) rule adopted for this species at 50 CFR 17.47(d), Federal Register Citation 85 FR 65241.

**Please fill out the Questionnaire at the end of this key and submit this completed form to the nearest U.S. Fish and Wildlife Service Ecological Services Field Office. The subject line in your email should read "ABB 4d Key Letter Request" **

The Service will respond by providing you a certification letter indicating that you have followed the Service's ABB 4(d) key process and that your proposed project is excepted from take prohibitions.

No - Continue to Step F

<u>Step F</u> - If you have reached this step, you have determined that your action area is wholly located within either the Northern Plains or New England analysis areas. To narrow your project down further, please answer the following question(s):

Does your proposed action meet either following criteria:

• Is the proposed action considered to be normal ranching and grazing activities? See definitions.

-OR-

• Is the action being led by an employee or agent of the Service or of a State conservation agency that is operating a conservation program pursuant to the terms of a cooperative agreement with the Service in accordance with section 6(c) of the ESA, who is designated by his or her agency for such purposes, may, when acting in the course of his or her official duties, take American burying beetles, provided that, for State conservation agencies, the American burying beetle is covered by an approved cooperative agreement to carry out conservation programs?

Yes - the action meets one of the two criteria outlines above.

The Action is consistent with activities analyzed in the Service's Programmatic Biological Opinion for the 4(d) rule. The Action may affect the American burying beetle; however, any take that may occur as a result of the Action is <u>not prohibited</u> under the Act, Section 4(d) rule adopted for this species at 50 CFR 17.47(d), Federal Register Citation 85 FR 65241.

**Please fill out the Questionnaire at the end of this key and submit this completed form to the nearest U.S. Fish and Wildlife Service Ecological Services Field Office. The subject line in your email should read "ABB 4d Key Letter Request" **

The Service will respond by providing you a certification letter indicating that you have followed the Service's ABB 4(d) key process and that your proposed project is excepted from take prohibitions.

No - the action does not meet either of the criteria above – Continue to Step G

<u>Step G</u> - If you have reached this step, any incidental take that may occur as a result of your project is not excepted by the 4(d) rule. The following question will help to determine if any take associated with your project would be identified as prohibited take, in accordance with the 4(d) rule.

Will the action include soil disturbance of suitable ABB habitat, including but not limited to the use of vehicles or heavy equipment, vegetation removal, use of herbicides, pesticides, other hazardous chemicals that may impact soil or vegetation or otherwise impact ABB habitat?

<u>Yes</u> – Any Incidental take from the proposed project is <u>prohibited</u> take and based on your answers in Steps A-F is <u>not excepted</u> under the 4(d) Rule. Please contact the closest U.S. Fish and Wildlife Service Ecological Services Field Office for further guidance. Office contact information is provided at the end of this key.

<u>No</u> - Any incidental take associated with your proposed project is <u>not prohibited</u>:

The Action is consistent with activities analyzed in the Service's Programmatic Biological Opinion for the 4(d) rule. The Action may affect the American burying beetle; however, any take that may occur as a result of the Action is not prohibited under the Act, Section 4(d) rule adopted for this species at 50 CFR 17.47(d), Federal Register Citation 85 FR 65241.

**Please fill out the Questionnaire at the end of this key and submit this completed form to the nearest U.S. Fish and Wildlife Service Ecological Services Field Office. **

The Service will respond by providing you a certification letter indicating that you have followed the Service's ABB 4(d) key process and that your proposed project is excepted from take prohibitions.

QUESTIONNAIRE - American Burying Beetle 4(d) Key

1. Please select the activity that best matches your proposed action.

Soil disturbance related to urban expansion or construction of structures

Soil disturbance related to agricultural conversion of ABB habitat to cropland

Soil disturbance related to grazing and ranching practices

Soil disturbance related to prescribed fire

Soil disturbance related to forestry practices

Wind Industry development and turbine operation

Soil disturbance related to oil and gas development

Soil disturbance related to road construction and maintenance

Soil disturbance related to transmission line construction and maintenance

Soil disturbance related to water line infrastructure construction and maintenance

Soil disturbance related to communication infrastructure construction and maintenance

Soil disturbance related to wildlife management.

Other activities with soil disturbance - briefly describe below

2. Estimate the total acres of suitable American burying beetle habitat that may be affected by your proposed project.

Ecological Services Field Office Contact Information

Arkansas Ecological Services Field Office

110 S. Amity Road

Suite 300

Conway, AR 72032 Phone: 501-513 4470

Fax: 501-513 4480

Kansas Ecological Services Field Office

2609 Anderson Avenue Manhattan, Kansas 66502 Telephone: 785-539-3474

Fax: 785-539-8567

Nebraska Ecological Services Field Office:

9325 South Alda Road Wood River, NE 68883 Fax:(308) 384-8835

Phone: (308) 382-6468

Email: NebraskaES@fws.gov

SEND REQUESTS HERE

New England Ecological Services Field Office

70 Commercial St., Suite 300

Concord, NH 03301 Phone: (603) 223-2541 Fax: (603) 223-0104

Oklahoma Ecological Services Office

9014 E 21st Street Tulsa, OK 74129

Phone: 918-581-7458

Email: OKProjectReview@fws.gov

SEND REQUESTS HERE

http://www.fws.gov/southwest/es/Oklahoma/

South Dakota Ecological Services Field Office

420 S. Garfield Avenue, Suite 400

Pierre, SD 57501-5408

Phone (605) 224-8693 FAX 605-224-9974

Email: southdakotafieldoffice@fws.gov

DEFINITIONS - American Burying Beetle 4(d) Key

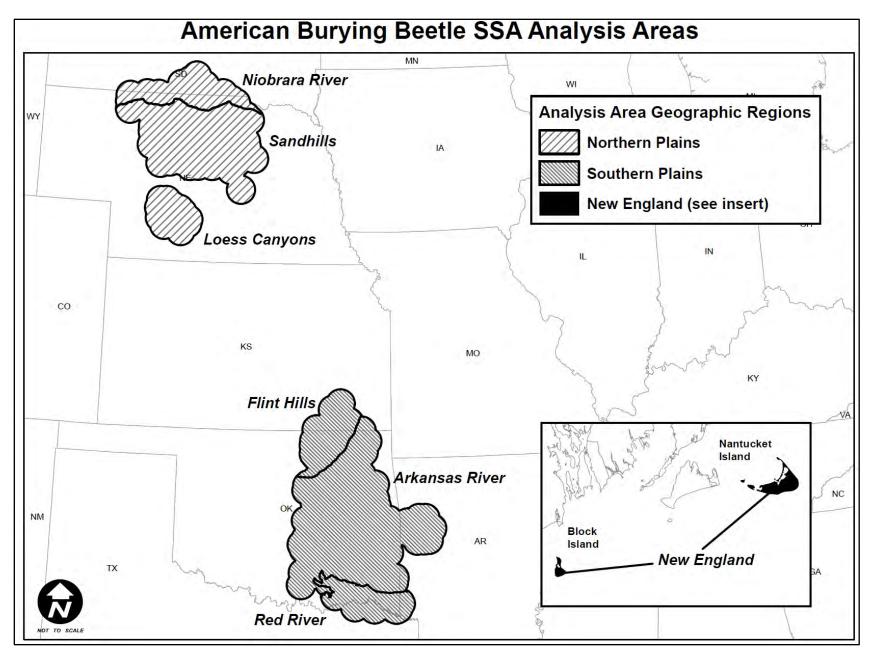
- "Area of Influence" is the area within which any project should consider potential effects to the listed species. The Area of Influence typically encompassed larger areas than simply where the species is known to exist. For example, aquatic species may occur in only one small section of a stream, but work upstream of that area, or within the watershed could result in effects to where the species is located, thus impacting the listed species. Those effects warrant consideration under Section 7 of the Act.
- "Conservation Lands" We define "conservation lands" in the Southern Plains analysis areas as lands included within the existing boundaries of Fort Chaffee in Arkansas (approximately 64,000 acres), and McAlester Army Ammunition Plant (approximately 45,000 acres) in Oklahoma, and Camp Gruber/Cherokee Wildlife Management Area (approximately 64,000 acres) in Oklahoma. These areas have defined boundaries and management that is compatible with recovery for the American burying beetle.
- "Incidental take" is defined by the Endangered Species Act as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, plowing firebreaks for prescribed burns can kill ABBs in the soil, but the purpose of the activity is not to kill ABBs.
- "Ranching and grazing" means activities involved in grazing livestock (e.g., cattle, bison, horse, sheep, goats, or other grazing animals) such as: gathering of livestock; construction and maintenance of fences associated with livestock grazing; installation and maintenance of corrals, loading chutes, and other livestock working facilities; development and maintenance of livestock watering facilities; placement of supplements such as salt blocks for grazing livestock; and, when associated with livestock grazing, the control of noxious weeds, haying, mowing, and prescribed burning. Ranching and grazing does not include any form of farming, conversion of grassland to cropland, or management of cropland.
- "Soil disturbance" Soil disturbance means movement or alteration of soil associated with modifying the existing land use. Soil disturbance includes actions such as grading, filling, soil excavating or topsoil stripping. Soil disturbance also includes non-physical alterations such as chemical treatment, including ground or soil sterilizers, and pesticides that would make the habitat unsuitable.

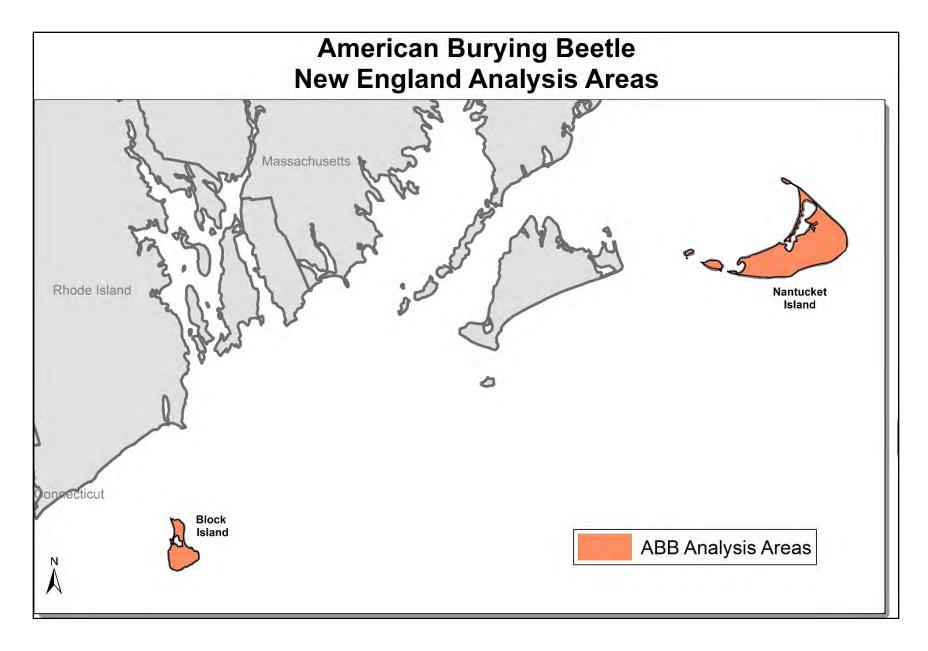
"Suitable Habitat" While the ABB uses a wide variety of habitats, the Service currently believes that areas exhibiting the following characteristics will not be of conservation value to ABBs and will not be credited as mitigation, except as possible buffer credits described below under the *Crediting Method* section. Areas exhibiting these characteristics should be excluded from mitigation lands because they are considered *unfavorable* for use by ABBs based on disturbance regime, vegetation structure, unsuitable soil conditions, and carrion availability:

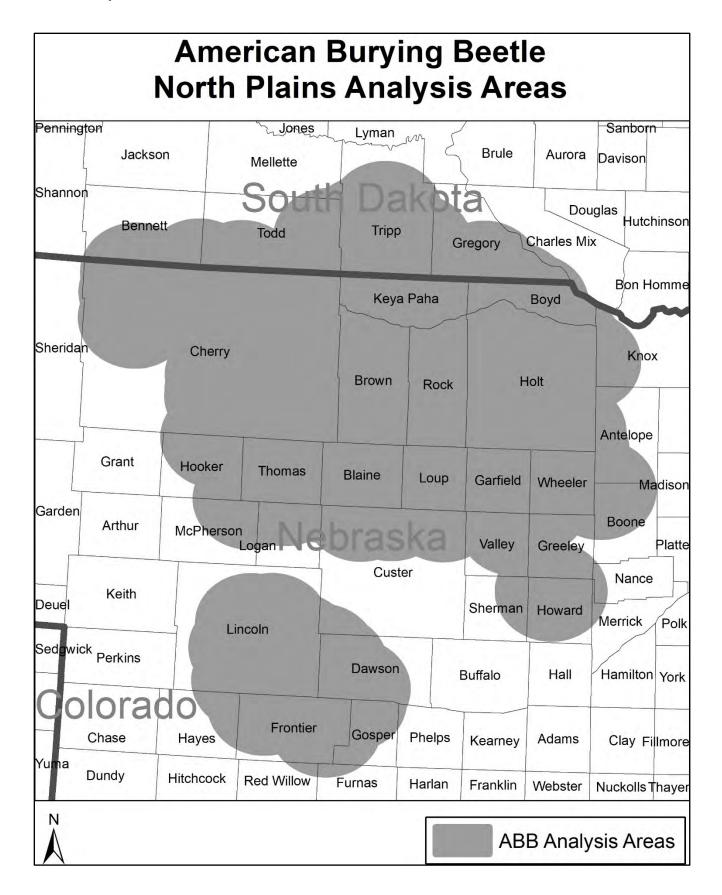
- 1. Land that is tilled on a regular basis, planted in monoculture, and does not contain native vegetation.
- 2. Pasture or grassland that has been maintained through frequent mowing, grazing, or herbicide application at a height of 20 cm (8 inches) or less.
- 3. Land that has already been developed and no longer exhibits topsoil, leaf litter, or vegetation.
- 4. Urban areas with maintained lawns, paved surfaces, or roadways.
- 5. Stockpiled soil without vegetation.
- 6. Wetlands or permanent waterbodies with standing water or saturated soils. Areas adjacent to wetlands and/or riparian areas are not considered unfavorable for the ABB, as they may be important for ABBs seeking moist soils during dry conditions.

"Take" is defined by the Act as 'to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any endangered species. Purposeful take is when the reason for the activity or action is to conduct some form of take. For instance, conducting a research project that includes collecting and handling ABBs is a form of purposeful take. Intentionally killing or harming ABBs is also purposeful take and is prohibited.

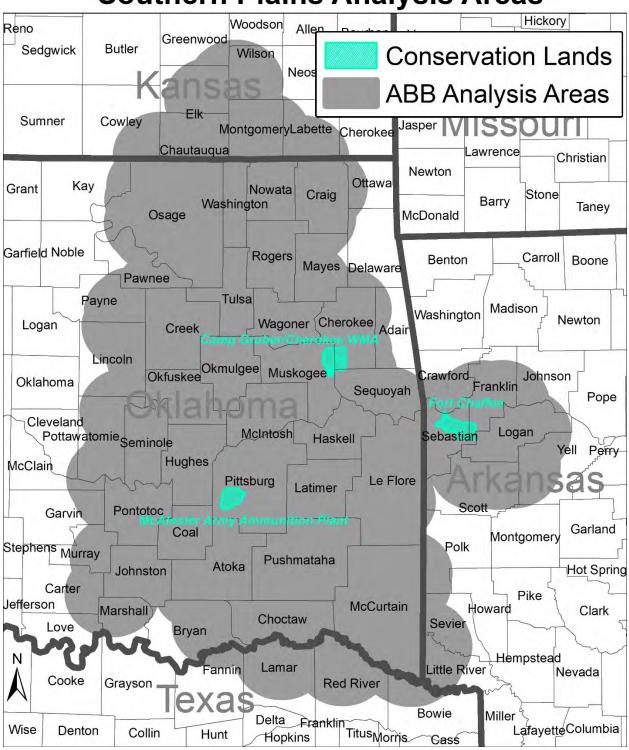
Additional information regarding ABB biology and habitat can be found on the OKESFO webpages at: http://www.fws.gov/southwest/es/Oklahoma/ABB Add Info.htm.







American Burying Beetle Southern Plains Analysis Areas





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Oklahoma Ecological Services Field Office 9014 East 21st Street Tulsa, OK 74129-1428

Phone: (918) 581-7458 Fax: (918) 581-7467 http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: February 11, 2021

Consultation code: 02EKOK00-2019-TA-1945 Event Code: 02EKOK00-2021-E-02250

Project Name: JP 32728(04) 33788(04)(08)(09)(10) I-44/US-75 Interchange with I-44 Corridor

Ultimate Reconstruction

Subject: Verification letter for the 'JP 32728(04) 33788(04)(08)(09)(10) I-44/US-75

Interchange with I-44 Corridor Ultimate Reconstruction' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-

eared Bat and Activities Excepted from Take Prohibitions.

Dear Elizabeth Nichols:

The U.S. Fish and Wildlife Service (Service) received on February 11, 2021 your effects determination for the 'JP 32728(04) 33788(04)(08)(09)(10) I-44/US-75 Interchange with I-44 Corridor Ultimate Reconstruction' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not

completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) <u>only</u> for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- American Burying Beetle Nicrophorus americanus Threatened
- Piping Plover Charadrius melodus Threatened
- Red Knot Calidris canutus rufa Threatened

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1] Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

JP 32728(04) 33788(04)(08)(09)(10) I-44/US-75 Interchange with I-44 Corridor Ultimate Reconstruction

2. Description

The following description was provided for the project 'JP 32728(04) 33788(04)(08)(09)(10) I-44/US-75 Interchange with I-44 Corridor Ultimate Reconstruction':

The existing US-75 roadway has two 12-foot driving lanes in each direction (four lanes total) divided with a 30-foot grass median with two four-foot inside shoulders and two 10-foot outside shoulders. The US-75 roadway has an average annual daily traffic (AADT) volume of 76,555 vehicles per day (vpd), with a future projected AADT of 90,429 vpd. The current and future traffic volumes on US-75 require additional driving lanes to provide an adequate and safe level of service (LOS). There are several vertical curves in the corridor that do not meet design standards and do not allow for adequate sight distance for vehicles to reduce speed at critical moments.

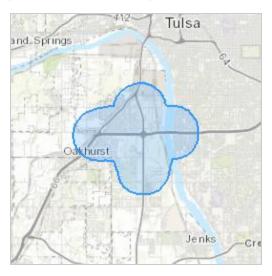
The existing I-44 roadway has two 12-foot driving lanes in each direction (four lanes total) divided with a 30-foot grass median with two four-foot inside shoulders and two 10-foot outside shoulders. This portion of I-44 has a high accident rate, the latest 10-year average number being 4 times the statewide average for similar highways. Rear end collisions account for almost half of the accidents, which is indicative of congested conditions. The I-44 roadway has an AADT of 89,922 vpd, with a future projected AADT of 100,660 vpd. In the I-44 corridor the current and future traffic volumes also require addition driving lanes to provide an adequate and safe LOS. There are 19 existing bridges throughout the corridor study area, including the interchange ramps at US-75. The decks, substructures and superstructures of all bridges have relatively low condition ratings, some with deficient horizontal and vertical curves, and six of the bridges are rated either structurally deficient or functionally obsolete. The purpose of the project is to accommodate existing and future growth and traffic demand, decrease congestion, and improve access and mobility.

The proposed improvement along US-75 will be reconstructing the mainline beginning at the full width pavement section approximately 3,000 feet north of W. 71st Street, extending north through the I-44 interchange 2.0 miles with four 12-foot-wide concrete driving lanes in each direction (eight lanes total) on the existing alignment, widening to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. Initially, US-75 will be striped for 3 lanes in each direction until such time as the remainder of the corridor is widened to 8 lanes. The US-75 interchange with W. 61st Street will be

modified, and a frontage road will be constructed with two 12-foot driving lanes on the east side of US-75 extending north from W. 61st Street approximately .85-mile intersecting with W. Skelly Drive.

The proposed improvement along I-44 will be to reconstruct the mainline beginning at the junction of I-244, extending east through the US-75 interchange approximately 2.85 miles to just east of the Arkansas River, with three 12-foot-wide concrete driving lanes in each direction (six lanes total) on the existing alignment, widening to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. In addition, 12-foot wide auxiliary lanes will be constructed on each highway to provide exit or entry lanes to and from interchange ramps. W. Skelly Drive will be reconstructed with two 12-foot-wide driving lanes on an offset alignment to the south to accommodate the additional highway width and new ramp configuration. W. 51st Street will be extended east and constructed across US-75 with a new span bridge over, with two 12-foot driving lanes with curb and gutter and will be constructed on a slight offset alignment to the south from Olympia Avenue to Indiana Avenue to better align with intersections.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.08621266199322,-96.01203035251103,14z



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

- 1. Is the action authorized, funded, or being carried out by a Federal agency? *Yes*
- 2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

No

3. Will your activity purposefully **Take** northern long-eared bats?

No

4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

Automatically answered

No

5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

No

7. Will the action involve Tree Removal?

Yes

- 8. Will the action only remove hazardous trees for the protection of human life or property? *No*
- 9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

74.1

2. If known, estimated acres of forest conversion from April 1 to October 31

74.1

3. If known, estimated acres of forest conversion from June 1 to July 31

74.1

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

n

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

ENDANGERED, THREATENED AND CANDIDATE SPECIES, DESIGNATED CRITICAL HABITAT, BALD EAGLE AND MIGRATORY BIRD ASSESSMENTS

For

USFWS TA	TAILS # 02EKOK00-2019-SLI-1945						
Email used to request IPaC official species list Biolog				Biolog	ogist@garverusa.com		
County	Tulsa	JP Number	33788(0	(8)	Project	J3-3788(08)	
			33788(0	9)	Number	J3-3788(09)	
			33788(1	0)		J3-3788(10)	
			33788(1	1)		J3-3788(11)	
Road	I-44 & US-75	Water Body Name		Arkansas River, Mooser Creek, Cherry			
Number					Creek and Tributaries to Mooser Creek		
ROW	2022	Let Date	WP2&5	: 2027	Project	3 Miles Along I-44	
Date			WP3&4	: unkn	Length	2.5 Miles Along US-75	
Project General Location I-44 from I-244 to the Arkansas River, including the I-44/U Interchange in Tulsa, OK			r, including the I-44/US-75				
Project Description & I-44/US-75 Interchange Reconstruction From I-244 Through			om I-244 Through Arkansas				
Statement F	From Oracle	River					

Prepared for:

Oklahoma Department of Transportation Environmental Programs Division 200 NE 21st Street Oklahoma City, OK 73105

Prepared by:

Biologist Name	Megan Philips-Schaap
Company/Agency Name	Garver
Address	6450 South Lewis
City, State Zip	Tulsa, OK 74136
Report Date:	November 6, 2020
Field Survey Date	May 9 and June 11, 2019 & September 30
	and October 1, 2020
Field Survey Biologist(s)	Megan Philips-Schaap & Lacee Stanley

Form Date: April 2020

1. PROJECT OVERVIEW

1.1 Federal Nexus

This biological assessment, prepared by the above named Company/Agency for the Oklahoma Department of Transportation (ODOT), addresses the above named project in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended. Section 7 of the ESA requires that, through consultation with the U.S. Fish and Wildlife Service (Service), federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat. This assessment evaluates the potential effects of the proposed transportation project on species that are federally listed under the ESA. Specific project design elements are identified that avoid or minimize adverse effects of the proposed project on listed species and designated critical habitat.

1.2. Project Description¹

Grade, Drain, Surface and Bridge

Description of the **existing** bridge/roadway facility and reason for proposed project

The existing I-44 roadway has two 12-foot driving lanes in each direction (four lanes total) divided by a 30-foot grass median with four-foot inside shoulders and 10-foot outside shoulders. The I-44 roadway has a 2020 average annual daily traffic (AADT) of 58,989 vehicles per day (vpd), with a 20-year projected AADT of 77,430 vpd. This portion of I-44 has a high accident rate, the latest 10-year average number being four times the statewide average for similar highways. Rear end collisions account for almost half of the accidents, which is indicative of congested conditions.

The existing US-75 roadway has two 12-foot driving lanes in each direction (four lanes total) divided with a 30-foot grass median with two four-foot inside shoulders and two 10-foot outside shoulders. The US-75 roadway has a 2020 average annual daily traffic (AADT) volume of 76,555 vehicles per day (vpd), with a 20-year projected AADT of 90,429 vpd. The current and future traffic volumes on US-75 require additional driving lanes to provide an adequate and safe level of service.

Skelly Drive parallels I-44 to the south and serves as a frontage road for the I-44 eastbound on/off ramps. Skelly Drive consists of two 13-foot-wide driving lanes with curb and gutter. There are several vertical curves in the corridor that do not meet design standards and do not allow for adequate sight distance for vehicles to reduce speed at critical moments.

South Olympia Ave. parallels I-44 to the north and transitions from a narrow residential road beginning east of the interchange and consisting of roughly two 9-foot concrete driving lanes with no shoulders, transitioning to two 13-foot driving lanes with curb and gutter that acts as a business and I-44 access road crossing under the Arkansas River bridge.

<u>I-44 bridges include</u>: The existing bridges on I-44 over the Arkansas River (NBIs 20580 and 20326, westbound & eastbound respectively) are 55-foot-wide span bridges with a 52-foot-wide clear roadway. The westbound bridge has a sufficiency rating of 85.6 and the eastbound bridge has a sufficiency rating of 83.6; both are rated as not deficient. The existing bridges on I-44 over

-

¹ Includes I-44/US-75 Interchange Modifications

Tulsa-Sapulpa railroad (NBIs 20294 and 12827, westbound & eastbound respectively) have different roadway geometrics. The westbound bridge is a 55.1-foot-wide span bridge with a 52-foot-wide clear roadway and has a sufficiency rating of 81.6. The eastbound bridge is a 58.3-foot-wide span bridge with a 61-foot-wide clear roadway and has a sufficiency rating of 80.1. Both are rated as not deficient.

<u>US-75</u> bridges include (south to north): The existing West 61st Street bridge over US-75 (NBI 16564) is a 33-foot wide bridge with a 28-foot wide clear roadway. This bridge has a sufficiency rating of 87.0 and rated not deficient. The existing US-75 northbound bridge over 49th Street (NBI 18267) is a 52.2-foot-wide bridge with a 50.7-foot-wide clear roadway. This bridge has a sufficiency rating of 93.7 and rated not deficient. The existing US-75 southbound bridge over 49th Street (NBI 18268) is a 45.1-foot-wide bridge with a 43.7-foot-wide clear roadway. This bridge has a sufficiency rating of 80.7 and rated functionally obsolete. The existing US-75 northbound bridge over 46th Street (NBI 18254) is a 39.5-foot-wide bridge with a 38-foot-wide clear roadway. This bridge has a sufficiency rating of 97.8 and rated not deficient. The existing southbound bridge over 46th Street (NBI 18255) is a 40-foot-wide steel span bridge with a 38-foot-wide clear roadway. This bridge has a sufficiency rating of 97.8 and rated not deficient.

Ramp bridges include: The existing bridge that carries northbound US-75 to I-44 eastbound ramp over Mooser Creek and Skelly Drive (NBI 15838) is a 25-foot-wide steel span bridge with a 23-foot-wide clear roadway. The bridge has a sufficiency rating of 92.4 and is rated as not deficient. The existing bridge that carries eastbound I-44 to US-75 southbound ramp over Mooser Creek and Skelly Drive (NBI 15843) is a 25-foot-wide bridge with a 23-foot-wide clear roadway. This bridge has a sufficiency rating or 95.7 and rated not deficient.

The purpose of these projects is to improve traffic operations, expand capacity to meet existing and future traffic volumes and thus improve safety, and meet current roadway and bridge design standards.

Description of **proposed** improvements

Reconstruction of the I-44/US-75 interchange includes 5 work packages / projects. Work Package (WP) 1, JP 33788(04), was studied in 2019 and largely focused on the U-75 bridges over I-44 and over Skelly Rd./Mooser Creek, and I-44 widening from the interchange extending to just west of the Tulsa-Sapulpa railroad; it is currently under construction (studies attached). The remainder of the work packages are being studied together in this report. WP 2, JP 33788(08) generally focuses on US-75 from the interchange south. WP 3, JP 33788(09), largely focuses on widening the Arkansas River bridges and Tulsa-Sapulpa railroad bridges, constructing a US-75 frontage road, and extending Skelly Drv. east to meet the I-44 frontage road. WP 4, JP 33788(10) generally focuses on I-44 from I-244 to the US-75 interchange and reconstructing the western portion of Skelly Drv. WP 5, JP 33788(11) generally focuses on US-75 from the interchange north and reconstruction of S. Olympia Ave. and extending it west under the interchange to W. 51st St.. WP 2 and 5 will be constructed concurrently and together include most of the fly-overs and ramp bridges of the interchange.

Work Project 2

The proposed improvements for WP2 included constructing the ultimate US-75 corridor from north of 71st Street extending north to Mooser Creek. The ultimate US-75 mainline will consist of three lanes in each direction (six lanes total) on the existing alignment, widening to the inside

with 12-foot-wide shoulders and a 26-foot wide open section median. In addition, auxiliary lanes will be constructed to provide exit or entry lanes to and from interchange ramps.

A two-way frontage road will be constructed east of US-75 beginning at West 61st Street extending north to the northbound entrance ramp and the Work Package 3 connection. The frontage road will be a two-lane open section with eight-foot shoulders.

The US-75 and West 61st Street Interchange will be reconstructed. The proposed interchange will include three one-way ramps from West 61st Street and one one-way ramp from the new frontage road. The ramps will be one-lane open section with two-foot inside shoulder and eightfoot outside shoulder. West 61st Street will be reconstructed as a five-lane curbed section with buffered bike lanes and sidewalks along both sides at the new interchange. The existing West 61st Street bridge over US-75 (NBI 16564) will be replaced with Bridge W, a 91-foot-wide span bridge on the existing alignment.

Three ramps will be constructed within the I-44 & US-75 Ultimate Interchange.

- Ramp E1 is the WB I-44 to SB US-75 Ramp and Bridge H. Ramp E1 will be two-lane open section with eight-foot shoulders. Bridge H will be constructed as a 47-foot wide flyover ramp bridge.
- Ramp E2 is the WB I-44 to NB US-75 Ramp and Bridge I. Ramp E2 will be two-lane open section with eight-foot shoulders. Bridge I will be constructed as a 32-foot wide ramp bridge.
- Ramp E6 is the EB I-44 to SB US-75 Ramp and Bridge N. Ramp E6 will be one-lane open section with two-foot inside shoulder and eight-foot outside shoulder. Bridge N will be constructed as a 32-foot wide ramp bridge.

Skelly Drive will be reconstructed from Union Avenue east to US-75 as a two-lane curbed section with a sidewalk along the north and south side of Skelly Drive.

Work Project 5

The proposed improvements for WP5 included constructing the ultimate US-75 corridor from north of I-44 extending north to near 41st Street. The ultimate US-75 mainline will consist of three lanes in each direction (six lanes total) on the existing alignment, widening to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. In addition, auxiliary lanes will be constructed to provide exit or entry lanes to and from interchange ramps.

Four US-75 bridges will be replaced.

- The existing US-75 NB bridge over West 46th Street (NBI No. 18254) will be replaced with Bridge G1, a 74'-5.5" wide span bridge on the existing alignment.
- The existing US-75 SB bridge over West 46th Street (NBI No. 18255) will be replaced with Bridge G2, an 86'-5.5" wide span bridge on the existing alignment.
- The existing US-75 NB bridge over West 49th Street (NBI No. 18267) will be replaced with Bridge J1, a 74'-5.5" wide span bridge on the existing alignment.
- The existing US-75 SB bridge over West 49th Street (NBI No. 18268) will be replaced with Bridge J2, a 125'-4.5" wide span bridge on the existing alignment, which also carries Ramp E4.

Two new US-75 bridges will be constructed.

- Bridge F1, an 82'-6" wide single span bridge, will be constructed on the existing NB alignment over a new crossing of West 51st Street.
- Bridge F2, a 70'-6" wide single span bridge, will be constructed on the existing SB alignment over a new crossing of West 51st Street.

Ramp Z, the US-75 SB entrance ramp from West 41st Street, will be reconstructed as one-lane open section with two-foot inside shoulder and eight-foot outside shoulder.

West 46th Street and West 49th Street will be reconstructed under Bridges G1 and G2 and Bridges J1, J2, and J3, respectively, as a two-lane curbed section with sidewalk shelves along their north and south sides.

West 51st Street will be reconstructed from east of Union Avenue extending east along a new alignment to east of Indian Avenue a two-lane curbed section with a sidewalk along the north side. The connections to West 51st Street will be reconstructed at Olympia Avenue, Maybelle Avenue, Lawton Avenue, Jackson Avenue, and Indian Avenue as a two-lane curbed section with sidewalk shelves along their east and west sides.

Five ramps will be constructed within the I-44 & US-75 Ultimate Interchange as one-lane open section with two-foot inside shoulder and eight-foot outside shoulder.

- Ramp E2 is the WB I-44 to NB US-75 Ramp.
- Ramp E3 is the SB US-75 to EB I-44 Flyover Ramp and Bridge L.
- Ramp E4 is the SB US-75 to WB I-44 Ramp and Bridge M.
- Ramp E5 is the EB I-44 to NB US-75 Loop Ramp.
- Ramp E8 is the NB US-75 to WB I-44 Flyover Ramp and Bridge P.

Two flyover ramp bridges and two ramp bridges will be constructed within the I-44 & US-75 Ultimate Interchange.

- Bridge L will be constructed as a 32'-0"-foot wide flyover ramp bridge.
- Bridge P will be constructed as a 32'-0"-foot wide flyover ramp bridge.
- Bridge J3 will be constructed as a 32'-0"-foot wide ramp bridge.
- Bridge M will be constructed as 32'-0"-foot wide ramp bridge.

The roadways will remain open during construction and traffic will be adjusted utilizing construction phasing and temporary crossovers or pavement widening as needed.

Work Project 3

The proposed improvements associated with Work Package 3 are primarily to the southeast side of the I-44/US-75 interchange. Improvements include widening of I-44 to eight lanes from approximately 2,650 feet east of US-75 to the bridges over the Arkansas River (Bridges T1 and T2). These two bridges are proposed to be widened and will have varying clear roadway widths. Bridge T1 carries westbound traffic and will be widened to a 69-foot clear roadway, widening to 81 feet near the west bank where an additional auxiliary lane to US-75 will be added. Sixteen piers on Bridge T1 will be widened with one or two additional drill shafts and caps. Bridge T2 carries eastbound traffic and will be widened to a 69-foot clear roadway, widening to 81 feet at the west end to accommodate the additional auxiliary lane from US-75. Sixteen piers on Bridge T2 will be widened with one or two additional drilled shafts and caps. In total, 42 additional

drilled shafts, 72 inches in diameter will be constructed. It is estimated that 35 of these will be constructed within the OHWM of the Arkansas River.

A new I-44 Bridge over Tulsa-Sapulpa Union Railroad (Bridge R) will be constructed. Bridges R-1 and R-2 will each carry 4 lanes of traffic and have a 71-foot wide clear roadway.

At the northbound section of US-75 approaching the I-44 interchange, the roadway will widen to six lanes from approximately 2,100 feet south of I-44 to the south end of the bridge over Mooser Creek (Bridge B [WP1]). The ramp connecting northbound US-75 to eastbound I-44 over Mooser Creek and Skelly Drive (Bridge O) will be constructed. Bridge O will carry two lanes of traffic and have a 38-foot wide clear roadway. None of the proposed Bridge O piers will be within the OHWM of Mooser Creek.

Concerning the surrounding supporting roadways, approximately 0.73 mile of Skelly Drive will be realigned and reconstructed, beginning approximately 400 feet west of US-75 and extending east to the Arkansas River, where it curves under I-44 and becomes E. 51st Street on the north side of the interstate. E. 51st Street will be reconstructed from the Arkansas River west to the Tulsa-Sapulpa Railroad. The US-75 Frontage Road is a new alignment roadway that will be constructed on the east side of the highway from approximately 900 feet north of 61st Street to intersection of Skelly Dr. including Bridge U over Mooser Creek. Bridge U is proposed to be a 30-foot long reinforced concrete box (RCB). Retaining walls are anticipated at the Pepsi Plant South of I-44, retaining walls are expected on the east side of US-75 along Turkey Mountain, US-75 Frontage Road and between the northbound US-75 to eastbound I-44 ramp and Skelly Dr, but no sound walls are anticipated. The roadways will remain open during construction and traffic will be adjusted utilizing construction phasing and temporary crossovers or pavement widening as needed.

Work Project 4

The proposed work in WP 4 consist of improvements to I-44 between I-244 and US-75. The proposed improvement along I-44 will be to reconstruct the mainline (beginning east of I-244 junction to just west of Union Ave.) with three 12-foot-wide concrete driving lanes in each direction (six lanes total) on the existing alignment, widening to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. Service ramps A and C (33rd W. Ave) will be reconstructed to one 19-foot-wide driving lane with curbs on either side. The following service ramps will be reconstructed to one 15-foot-wide driving lane with one shoulder with carrying widths:

- B eastbound off ramp to 33rd W. Ave.
- D eastbound off ramp from 33rd W. Ave.
- G-1 westbound off-ramp from E. 51st St.
- G-2 eastbound off-ramp to E. 51st St.

In addition, approximately 0.80 mile of Skelly Drive will be reconstructed with two 12-foot-wide driving lanes on an offset alignment to the south to accommodate the additional highway width and new ramp configurations. Partial reconstruction of system ramps E-4 (southbound US-75 to westbound I-44) and E-6 (eastbound I-44 to southbound US-75) is proposed to be similar to service ramps B, D, G-1, and G-2. The roadways will remain open during construction and traffic will be adjusted utilizing construction phasing and temporary crossovers or pavement widening as needed.

Check if any of the following is expected as part of the proposed action	
Work within OHWM is expected	\boxtimes
Project is OFF-SET alignment	\boxtimes
Project involves NO OFF EXISTING PAVEMENT work	
Project requires new ROW (permanent &/or temporary)	\boxtimes

1.3. Project Area and Setting

Project Locat	ion	Environmental Study Foot	Environmental Study Footprint			
Section Range & Township	Lat/Long NAD 83)	<u>Dimensions</u>	Level IV Ecoregion (Woods et al. 2005)	Game Type (Duck and Fletcher 1943)		
S25-S28 and S33-S36, T19N, R12E; S2 and S3, T18N, R12E	North end (180 feet south of the US-75/W. 41 st St. overpass): 36.103802, -96.009269 South end (0.5-mile north of the US-75/W. 71 st St. overpass): 36.068327, -96.006620 East end (west of Riverside Drive): 36.089949, -95.984828 West end (I-244/I-44 interchange): 36.088449, -96.039041	3.0-mile long segment of I-44¹ on existing roadway alignment from I-244/I-44 interchange extending east to the Arkansas River, with widths varying from 35 feet to 225 feet from the existing pavement and from 245 feet to 555 feet at intersections (excluding the I-244 interchange). 2.5-mile long segment of US-75 beginning 3,000 feet north of 71st Street and extending north to approximately 180 feet south of 41st Street with widths varying from 40 feet to 475 feet from the existing pavement and from 165 feet to 805 feet at intersections (excluding the I-244 interchange).	350.5	Northern Cross Timbers (29a) of the Cross Timbers	Tallgrass Prairie	

Action Area:

The Action Area includes the Environmental Study Footprint plus a 1-mile buffer surrounding the Environmental Study Footprint for the Northern Long-eared Bat travel corridor.

2. FEDERALLY LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Species Range and Occurrence Evaluation (Check $\sqrt{\text{all that apply}}$)

Species	IPaC ¹	Watershed ²	Water Body ³	Records ⁴
	Check if Yes	Check if YES	Check if Yes	Check if Yes
Red-cockaded Woodpecker				
Whooping Crane				
Gray Bat				
Indiana Bat				
Ozark Big-eared Bat				
Neosho Mucket				
Ouachita Rock Pocketbook				
Scaleshell Mussel				
Winged Mapleleaf				
American Burying Beetle	\boxtimes			
Harperella				
Piping Plover	\boxtimes			
Red Knot	\boxtimes			
Northern Long-eared Bat	\boxtimes			
Arkansas River Shiner				
Leopard Darter				
Neosho Madtom				
Ozark Cavefish				
American Alligator				
Rabbitsfoot Mussel				
Rattlesnake-master Borer Moth				

¹Species is on the Proposed Project's IPaC List

²Action Area is within a watershed associated with occupied water bodies

³Action Area includes an occupied water body

⁴Project site within 5 miles of known records

Designated or Proposed Critical Habitat	Action Area includes Designated Critical Ha $(Check \ \sqrt{\ if \ Yes})$	abitat					
Whooping Crane							
Arkansas River Shiner							
Leopard Darter							
Neosho Mucket							
Rabbitsfoot							
Action area is adjacent to McAlester Army Ammunition Plant or Camp Gruber/Cherokee WMA All of part of the action area is within the 10 mile gray bat priority area (ODOT will check) All of part of the action area is within the 2 mile gray bat priority area (ODOT will check) PaC Special Conditions Identified (wind energy projects or cell towers) for Piping Plovers Action area is within what percentage Whooping Crane migratory corridor							
Choose an item. Action area is within 15 miles of Salt Plains N	IWR, Hackberry Flat, or Foss Reservoir.						
Action area is within the historic range of the Action area is within 10 miles of the McCurta Action area is within 10 miles of the Pushmata	in County Wilderness Area						

3. ENVIRONMENTAL BASELINE

3.1. Ecological Processes and Conditions

Soils (Use Soil Map of Oklahoma by Carter and Gregory 2008)

Soil Class	Cherokee Prairies
Soil Name	Dennis-Bates-Taloka-Parsons
Soil Type	Mollisols and Alfisols
Soil Characteristics	Clayey and loamy, and humus-rich soils on very gentle slopes (3%)

Climate (Use Woods et al. 2005)

Precipitation	Mean annual inches	34-46
Growing Season	Number of days	195-225
Mean Temperatures	Summer min/max	70°F / 94°F
	Winter min/max	26°F / 49°F

River System

According to the 1956 (photorevised 1967) Sapulpa North, Okla. and the 1952 (photorevised 1967) Jenks, Okla. 7.5 minute United States Geological Survey (USGS) topographic quadrangles, four perennial streams (Arkansas River, Mooser Creek, Cherry Creek and Hager Creek) and ten intermittent streams (four tributaries to Mooser Creek, three tributaries to Hager Creek, two tributaries to Nickel Creek [a perennial stream outside of the Action Area] and one tributary to Cherry Creek) occur within the Action Area.

Land Use and Land Ownership

	Woodland, grassland, rangeland, pastureland, and limited cropland. The main crops are small grains, grain sorghum, hay, and soybeans. Abandoned farmland is common. Fire suppression and passive land use have allowed the woodland distribution to greatly expand. Extensive, but declining, oil fields occur; associated brine, drilling mud, and petroleum waste products have increased salinity in many streams. Small impoundments are common.
From Field investigation	The 2.5-mile long segment of US-75 mainly consists of dense forested tracts and maintained herbaceous right-of-way (ROW) south of the I-44 interchange, and private residential properties and open maintained ROW north of the interchange. The 3.0-mile long segment of I-44 mainly consists of commercial properties, residential yards, and open maintained ROW both west and east of the interchange. The remainder of the study area is occupied by roadway, waterbodies, a few light industrial properties, and tree-lined fencerows. According to the 1956 (photorevised 1967) Sapulpa North, Okla. and the 1952 (photorevised 1967) Jenks, Okla. 7.5 minute United States Geological Survey (USGS) topographic quadrangles, three perennial streams (Arkansas River, Mooser Creek and Cherry Creek) occur within the study footprint. In addition, six ephemeral streams, eight emergent wetlands, one scrub-shrub wetland, and one pond were identified during the field visit. Field work was conducted May 9, June 11, 2019 and September 31, October 1, 2020.

Terrestrial and Aquatic Community Descriptions (based on field site visit)

Terrestrial community types within the NEPA footprint includes riparian habitat, alluvial terrace (along the Arkansas River), palustrine emergent (PEM) wetland, palustrine scrub-shrub (PSS) wetland, upland wooded habitat, upland herbaceous, and ROW. Vegetation present within the riparian habitat predominately consist of black willow (Salix nigra), common hackberry (Celtis occidentalis), ash-leaf maple (Acer negundo), American elm (Ulmus americana), Shumard's oak (Quercus shumardii), silk tree (Albizia julibrissin), red maple (Acer rubrum), eastern red-cedar (Juniperus virginiana), eastern poison ivy (Toxicodendron radicans), flowering dogwood (Cornus florida), horsetail-spike-rush (Eleocharis equisetoides), river-bank grape (Vitis riparia), Virginia-creeper (Parthenocissus quinquefolia), horsebrier (Smilax rotundifolia), broad-leaf cattail (Typha latifolia), Johnson grass (Sorghum halepense), tall false rye grass (Schedonorus

arundinaceus), Japanese honeysuckle (Lonicera japonica), sticky-willy (Galium aparine), and common dandelion (Taraxacum officinale). Vegetation present within the alluvial terrace habitat predominately consist of black willow, eastern cottonwood (Populus deltoides), slippery elm (*Ulmus rubra*), green ash (*Fraxinus pennsylvanica*), American elm, ash-leaf maple, red mulberry (Morus rubra), American pokeweed (Phyolacca americana), late-flowering thoroughwort (Eupatorium serotinum), blue mistflower (Conoclinium coelestinum), Johnson grass, spotted lady's-thumb (*Persicaria maculosa*), bristle grass (*Setaria* sp.), eastern poison ivy, great ragweed (Ambrosia trifida), crown grass (Paspalum sp.), sedge, (Cyperus sp.), wood-oats (Chasmanthium sp.), Canadian goldenrod (Solidago canadensis), prairie fleabane (Erigeron strigosus), coastal sandbur (Cenchrus spinifex), Bahia grass (Paspalum notatum), golden crownbeard (Verbesina encelioides), heart-leaf peppervine (Ampelopsis cordata), and grape (Vitis sp.). Vegetation present within the PEM and PSS habitats include pecan, common buttonbush (Cephalanthus occidentalis), peatree (Sesbania herbacea), deciduous holly (Ilex decidua), broad-leaf cat-tail, eared redstem (Ammannia auriculata), short-bristle horned beak sedge (Rhynchospora corniculata), swamp smartweed (Persicaria hydropiperoides), creeping primrose-willow (Ludwigia repens), Oklahoma sedge (Carex oklahomensis), black willow, Plowman's-wort (Pluchea camphorata), rough cocklebur (Xanthium strumarium), lateflowering thoroughwort, nimbleweed (Muhlenbergia schreberi), arrowhead (Sagittaria sp.), rice cut grass (Leersia oryzoides), and an aster (Symphyotrichum sp.). Vegetation present within the upland forest habitat predominately consist of pecan (Carya illinoinensis), blackjack oak (Quercus marilandica), Shumard's oak, redbud (Cercis canadensis), ash-leaf maple, sugar-berry (Celtis laevigata), eastern red-cedar, Chinese privet (Ligustrum sinense), eastern poison ivy, Virginia-creeper, Canada goldenrod, prairie spiderwort (Tradescantia occidentalis), bushy bluestem (Andropogon glomeratus), swamp smartweed, Japanese honeysuckle, Queen Anne'slace (Daucus carota), sedge (Carex sp.), and southern dewberry (Rubus trivialis). Vegetation present within the upland herbaceous and ROW habitat include Bermuda grass (Cynodon dactylon), Johnson grass, clover (Trifolium sp.), vetch (Vicia asp.), tall false rye grass, and crown grass.

One aquatic community type within the overall NEPA footprint is the Arkansas River. This perennial feature is over channelized increasing the width of the alluvial terrace. The substrate is primarily sand and aquatic organisms observed includes mussels, frogs, turtles, and crayfish.

According to the closest weather station (Brookside, KOKTULSA32) to the study area, the area received 5.94 inches of rainfall within the two weeks prior to the May 9th field investigation with the majority of the precipitation (3.16 inches) occurring April 30, 2019, which was nine days before the start of the May field investigation. The area received 2.88 inches of rainfall within the two weeks prior to the June 11th field investigation with the majority of the precipitation (1.36 inches) occurring May 29th, which was thirteen days before the start of the June field investigation. Severe storms brought excess rain to the state of Oklahoma during the last two weeks of May causing major flooding across the state and including the study area. The normal rainfall for Tulsa in the month of May (1981-2010) is 5.82 inches; however, the total rainfall for May 2019 was 13.68 inches (Mesonet 2019). The normal annual total rainfall (1981-2010) for Tulsa is 40.87 inches and as of July 1, 2019, Tulsa has received 37.74 inches of rainfall in only six months. This rainfall, combined with large volumes of water released from the Keystone Dam upstream, resulted in the Arkansas River rising to over 18 feet (major flood stage) in Tulsa. Additional field work was required to delineate the Arkansas River due to potential features (e.g., OHWM and wetlands) being submerged during these 2019 floods. Field work was conducted on

September 30 and October 1, 2020. According to the closest weather station, the area received 1.30 inches of rainfall within the two weeks prior to the September 30th field investigation with the majority of the precipitation (1.14 inches) occurring September 22, 2020, which was eight days before the start of the September field investigation.

During the site investigation, multiple structures (e.g., culverts and bridges) were inspected for swallow use and evaluated for their suitability as potential roosting and/or nesting structures. Of the 91 structures within the study area, two exhibited evidence of past swallow use, three exhibited evidence of present use, and five exhibited evidence of past and present use. Twentynine (29) structures were unable to be fully inspected due to limited access, safety concerns, or not being identified during the field visit. For a list of structures inspected for swallow use, see section 5.2 *Migratory Bird Assessment*.

3.2 Species Habitat Analysis

Pedestrian survey of entire NEPA study footprint (<u>including 300-foot work zone buffer in karst areas</u>)	\boxtimes
Bridge/Structure inspected for bat use (Complete the Bridge Inspection Form)	\boxtimes

SPECIES	HABITAT	
American Burying Beetle	Number of acres of native perennial plant vegetation (where native perennial vegetation is the dominant vegetation) within the NEPA Environmental Study Footprint (include shapefiles).	82.9
Piping Plover	Sparsely vegetated sandy or gravelly shorelines and islands associated with the major river systems occur within the 0.25 miles of the NEPA Environmental Study Footprint.	\boxtimes
	Salt flats and mudflats associated with reservoirs occur within the 0.25 miles of the NEPA Environmental Study Footprint.	
Red Knot	Mudflats associated with reservoirs occur within the 0.25 miles of the NEPA Environmental Study Footprint.	
Northern Long-eared	Limestone karsts features occur within 0.5 mile of the NEPA Environmental Study Footprint.	
Bat	Live or dead trees/and or snags with a DBH of >= 3 inches occur within the NEPA Environmental Study Footprint .	\boxtimes
	10 trees or less with DBH of >= 3 inches	
	Barns or sheds occur within the NEPA Environmental Study Footprint.	\boxtimes
	Linear treed features such as fencerows, riparian forests, and other wooded corridors occur within 1 mile of the NEPA Environmental Study Footprint. Wooded corridors may be dense or loose aggregates of trees with variable amounts of canopy closure.	×

SPECIES HABITAT

Number of acres of forested/wooded area within the **NEPA Environmental Study Footprint** (<u>include shapefiles</u>). Include forests and woodlots, as well as linear features such as fencerows, riparian forests, and other wooded corridors. Wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1000 feet of other forested/wooded habitat.

74.1

YC 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 000	G	1 1 .1 11						
O .			`	g. an urban or agricultural area with STOP HERE. No assessment requ	nout suitable foraging habitat or corridors				
mixing the ortage, c	divert of structure to surta	ore roruging nationally, ene	ock tills box till	of of fibres. Housessment requ	<u></u>				
BRIDGE INSPEC	TION: Identify ALL Brid	ges by NBI # (include R	CB bridges)						
CULVTERT INSP	PECTION: Identify ALL	Culverts ≥4 feet in diam	eter within the S	tudy Area					
BARN/SHED INS	PECTION: Identify ALL	structures within the Stu	ıdy Area that po	tentially could be removed					
Method of Inspecti	Method of Inspection (check all that apply) ⊠ Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey								
		☐ Emergence Survey	(30 minutes at d	lusk and 1 hour after dark)					
		-							
ODOT Project JP	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day of Inspection				
Number	_			-	· -				

ODOT Project JP	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
Number						
32728(04)	Tulsa	61st Street S.	16564	US-75	5/9/2019	1107

Bridge/Culvert	Bat Indicators: Check all that apply				Structure Characteristics: Check all that apply					
Type/Structure	Note: Presence of at least one of these indicators is sufficient									
	evidence that bats are using the structure.									
	Live or Dead Bats		Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
Concrete		0					\boxtimes		\boxtimes	
Continuous Slab	Photo Documentation of the above Y/N			Pł	noto Documentation	of each of the above Y	/N			
Span Bridge		No	No	No			Yes	No	Yes	No

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possibl	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic Project Actions Include: check all that apply				
Netting	3		Bridge			under the	Bridge	ridge				
None/	Marginal	Excellent	Bright	Low	Cave-like	High	High Low None		Demolish/extend	Surface &	No work above	Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes				\boxtimes		\boxtimes			\boxtimes			

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)												
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not					
#)			Present	culverts)			Present					
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep			\boxtimes	Crevices, rough surfaces or impactions								
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span								
All guardrails	\boxtimes	\boxtimes		All guardrails								
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present					
Spaces between concrete end walls and the bridge deck				Crevices, rough surfaces or impactions								
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists								
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams								
BRIDGE/CULVERT/STRUCTURE COULD NOT due to height, traffic, or other conditions limiting acinspect interior due to conditions limiting access, ar NOTES: The bridge it too tall and over a very but the bridge deck and the pier caps where bats are limiting access.	ccess to thou nd explained usy highwa	roughly inspeding the Notes y to fully ins	ect all parts o									

32728(04)

1234

5/9/2019

NEPA Bridge & Structure Inspection Form for All Listed Bat Species

Olympia Avenue

•			•	g. an urban or agricultural area with STOP HERE. No assessment requi	nout suitable foraging habitat or corridors \Box
CULVTERT INSP	TION: Identify ALL Brid ECTION: Identify ALL PECTION: Identify ALL	Culverts ≥4 feet in diam	eter within the S	tudy Area tentially could be removed	
Method of Inspecti	on (check all that apply)			☐ Thermal ☐ Acoustic Surve lusk and 1 hour after dark)	у
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day of Inspection

Bridge/Culvert Type/Structure	Note:	ndicators: Che Presence of at ace that bats are	least one of	these indica	ators is suffi	cient	Structure Characteristics: Check all that apply				
	Live or Dead Bats Seen Guano Sta		Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
		0							\boxtimes		
Triple cell RCB	Photo Documentation of the above Y/N						Photo Documentation of each of the above Y/N			/N	
		No	No			No	No	Yes	No		

Mooser Creek

11970

For the bridge/culvert/structure listed above:

Tulsa

_ 01 0110	- 01 0110 0110B0/ 001/ 010/ 010/ 010/ 010												
Possibl	Possible Corridors for Light Levels under the Human Disturbance or Traffic						Project Actions Include: check all that apply						
Netting	Netting Bridge under the Bridge												
None/	Marginal	Excellent	Bright	Low	Cave-like	High	High Low None		Demolish/extend	Surface &	No work above	Not known	
poor						or Below Deck Percussive/ Loud or below				or below			
		\boxtimes			\boxtimes			\boxtimes			\boxtimes		

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)												
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not					
#)		1	Present	culverts)		_	Present					
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep			\boxtimes	Crevices, rough surfaces or impactions								
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span								
All guardrails	\boxtimes	\boxtimes		All guardrails								
All expansion joints			\boxtimes	BARN/SHED STRUCTURE	Present	Inspected	Not Present					
Spaces between concrete end walls and the bridge deck			\boxtimes	Crevices, rough surfaces or impactions								
Crevices, rough surfaces or impactions in concrete or stone			\boxtimes	Spaces between walls, ceiling joists								
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams								
BRIDGE/CULVERT/STRUCTURE COULD NOT due to height, traffic, or other conditions limiting ac inspect interior due to conditions limiting access, an	ccess to thou d explained	oughly inspe l in the Notes	ect all parts o									
NOTES: Historic rainfall/flooding events in May inspected on 6/11/2019 when the water was lower			•		e bridge. Th	nis bridge wa	as tully					

0	· ·		*	g. an urban or agricultural area with STOP HERE. No assessment requ	<u> </u>	g habitat or corridors							
BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed Method of Inspection (check all that apply) Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey													
		□ Emergence Survey	(30 minutes at d	lusk and 1 hour after dark)									
ODOT Project JP County Road Number/Name NBI Number Water Body (or road if over road) Date & Time of Day of Inspection Number County County													
32728(04) Tulsa US-75 NB to I-44 EB 15838 Mooser Creek & Skelly Drive 6/11/2019 1019													

Bridge/Culvert	Bat Ir	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply				
Type/Structure		Presence of at			ators is suffi	cient					
	evider	ice that bats are	e using the s	tructure.							
	Live or Dead Bats Seen Guano Stainin		Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
Start.											
Steel Stringer/Girder	Photo Documentation of the above Y/N						Photo Documentation of each of the above Y/N				
Stringer/Onder		No	No	No			No	No	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	- VI VII WII WII WI												
Possibl	le Corridors	for	Light Le	vels unde	er the	Human Disturbance or Traffic							
Netting	9		Bridge	dge under the Bridge									
None/	Marginal	Excellent	Bright	Low	Cave-like	High	High Low None		Demolish/extend	Surface &	No work above	Not known	
poor									or Below Deck	Percussive/ Loud	or below		
\boxtimes				\boxtimes		\boxtimes			\boxtimes				

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)												
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not					
#)		_	Present	culverts)		_	Present					
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep	\boxtimes			Crevices, rough surfaces or impactions								
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span								
All guardrails	\boxtimes			All guardrails								
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present					
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions								
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists								
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams								
BRIDGE/CULVERT/STRUCTURE COULD NOT due to height, traffic, or other conditions limiting access, are inspect interior due to conditions limiting access, are NOTES: The bridge could not be fully inspected the spaces between the bridge deck and pier caps	ccess to thou d explained due to heigh	roughly inspe l in the Notes ght. Guardra	ect all parts of sils could not									

0	·		*	g. an urban or agricultural area with STOP HERE. No assessment requ	_	g habitat or corridors						
CULVTERT INSP BARN/SHED INSI	TION: Identify ALL Brid PECTION: Identify ALL PECTION: Identify ALL ion (check all that apply)	Culverts ≥4 feet in diam structures within the Stu	eter within the Sudy Area that po	tentially could be removed	у							
ODOT Project JP County Road Number/Name NBI Number Water Body (or road if over road) Date & Time of Day of Inspection Number NBI Number County Name NBI Number NBI Nu												
32728(04)												

Bridge/Culvert	Bat In	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply				
Type/Structure		Presence of at			ators is suffic	cient					
	eviden	ce that bats are	e using the s	tructure.							
	Live or Dead Bats Seen Guano Staining				Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
C41											
Steel Stringer/Girder	Photo Documentation of the above Y/N						Pl	hoto Documentation	of each of the above Y	/N	
Stringer/Onder		No	No	No			No	No	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possibl	Possible Corridors for Light Levels under the					Human D	isturbance (or Traffic	Project Actions Include: check all that apply			
Netting Bridge under the Bridge												
None/	Marginal	Excellent	Bright	Low	Cave-like	High Low None			Demolish/extend	Surface &	No work above	Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes				\boxtimes					\boxtimes			

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)											
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not				
#)			Present	culverts)			Present				
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep			\boxtimes	Crevices, rough surfaces or impactions							
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span							
All guardrails	\boxtimes			All guardrails							
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present				
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions							
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists							
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams							
BRIDGE/CULVERT/STRUCTURE COULD NOT BE FULLY INSPECTED due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes											
NOTES: The bridge could not be fully inspected due to height. Guardrails could not be inspected due to heavy traffic. A snooper would be useful to access the spaces between the bridge deck and pier caps where bats may be roosting.											

	eet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors le foraging habitat), check this box and STOP HERE. No assessment required. \Box
•	ges by NBI # (include RCB bridges) Culverts ≥4 feet in diameter within the Study Area structures within the Study Area that potentially could be removed
Method of Inspection (check all that apply)	 ☑ Visual ☐ Ladder ☐ Snooper ☐ Thermal ☐ Acoustic Survey ☐ Emergence Survey (30 minutes at dusk and 1 hour after dark)

ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
32728(04)	Tulsa	US-75 SB	15832	Mooser Creek & Skelly Drive	6/11/2019	1035

Bridge/Culvert	Bat In	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply				
Type/Structure		Presence of at			ators is suffic	cient					
	eviden	ce that bats are	e using the s	tructure.							
	Live or Dead Bats Seen Guano Staining Sound			Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
C41											
Steel Stringer/Girder	Photo Documentation of the above Y/N					Pl	hoto Documentation	of each of the above Y	/N		
		No	No	No			No	No	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	201 110 0110001 0110101 01101 01101 01101 01101 01101 01101 01101 01101 01101 01101 0												
Possibl	Possible Corridors for Light Levels under the				er the	Human Di	isturbance (or Traffic	Project Actions I	Project Actions Include: check all that apply			
Netting Bridge under the Bridge													
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known	
poor									or Below Deck	Percussive/ Loud	or below		
\boxtimes				\boxtimes		\boxtimes			\boxtimes				

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)												
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not					
#)			Present	culverts)			Present					
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep			\boxtimes	Crevices, rough surfaces or impactions								
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span								
All guardrails	\boxtimes			All guardrails								
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present					
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions								
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists								
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams								
BRIDGE/CULVERT/STRUCTURE COULD NOT BE FULLY INSPECTED due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes NOTES: The bridge could not be fully inspected due to height. Guardrails could not be inspected due to heavy traffic. A snooper would be useful to access the spaces between the bridge deck and pier caps where bats may be roosting.												
and president and president and president		<i>y</i> 3 0 100.										

•			•	g. an urban or agricultural area with STOP HERE. No assessment requ	•	g habitat or corridors				
CULVTERT INSP BARN/SHED INSI	TION: Identify ALL Brid PECTION: Identify ALL (PECTION: Identify ALL) FOR (Check all that apply)	Culverts ≥4 feet in diamestructures within the Stu	eter within the Soldy Area that po	Study Area tentially could be removed Thermal Acoustic Surve lusk and 1 hour after dark)	y					
ODOT Project JP County Number Road Number/Name NBI Number Water Body (or road if over road) Date & Time of Day of Inspection										
32728(04)	Tulsa	I-44 EB to US-75 SB	15843	Mooser Creek & Skelly Drive	6/11/2019	1044				

Bridge/Culvert	Bat In	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply				
Type/Structure		Presence of at			ators is suffic	cient					
	eviden	ce that bats are	e using the s	tructure.							
	Live or Dead Bats Seen Guano Staining Sound			Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
C41								\boxtimes			
Steel Stringer/Girder	Photo Documentation of the above Y/N				Pl	noto Documentation of	of each of the above Y	/N			
Stringer/Onder		No	No	No			No	No	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	01 1110 011080/1011/1010/10110000 000/101											
Possib	Possible Corridors for Light Levels under the				er the	Human Di	isturbance (or Traffic	Project Actions Include: check all that apply			
Netting Bridge under the Bridge												
None/	Marginal	Excellent	Bright	Low	Cave-like	High Low None			Demolish/extend or Below Deck	Surface &	No work above	Not known
poor									Percussive/ Loud	or below		
\boxtimes				\boxtimes		\boxtimes			\boxtimes			

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)											
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not				
#)		_	Present	culverts)			Present				
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep	\boxtimes			Crevices, rough surfaces or impactions							
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span							
All guardrails	\boxtimes			All guardrails							
All expansion joints				BARN/SHED STRUCTURE	Present	Inspected	Not Present				
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions							
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists							
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams							
BRIDGE/CULVERT/STRUCTURE COULD NOT due to height, traffic, or other conditions limiting acciss, and inspect interior due to conditions limiting access, and NOTES: The bridge could not be fully inspected the spaces between the bridge deck and pier caps	ccess to thou d explained due to hei	roughly inspo I in the Notes ght. Guardra	ect all parts o s ils could not								

If all bridge, culverts and structures are 1,000 feet or linking the bridge, culvert or structure to suitable fora		٠ ٠		•	le foraging habitat or corridors
BRIDGE INSPECTION: Identify ALL Bridges by CULVTERT INSPECTION: Identify ALL Culvert BARN/SHED INSPECTION: Identify ALL structures.	s ≥4 feet in diamete	er within the St	•	e removed	
Method of Inspection (check all that apply) ⊠ V	sual Ladder	□ Snooper	\Box Thermal	☐ Acoustic Survey	

ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
32728(04)	Tulsa	US-75 SB	15839	I-44	6/11/2019	See Notes

☐ Emergence Survey (30 minutes at dusk and 1 hour after dark)

Bridge/Culvert Type/Structure	Note:	Presence of at acce that bats are	least one of	these indica	ators is suffi	cient	Structure Character	ristics: Check all th	at apply	
	Live or Dead Bats Seen Gu		Guano	Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long
Compute					\boxtimes					
Concrete Continuous Slab	Pho	Photo Documentation of the above Y/N					Pł	noto Documentation	of each of the above Y	/N
Continuous Stab		No No No					No No No No			

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possibl	e Corridors	for	Light Le	vels unde	er the	Human Disturbance or Traffic Project Actions Include: check all that apply						
Netting	etting Bridge under the					Bridge						
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend Surface & No work above Not k			
poor									or Below Deck Percussive/ Loud or below			
				\boxtimes		\boxtimes			\boxtimes			

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the heavy traffic both on and under the bridge, the cloverleaf interchange with no shoulders, and the safety concerns with crossing US-75 and/or I-44 on foot, the bridge could not be accessed. Therefore, the bridge was not fully inspected. Traffic control and a snooper would be useful to check the spaces between the concrete end walls and the bridge deck as well as in-between the bridge deck and pier caps where bats are likely to roost.

NEPA Bridge & Structure Inspection Form for All Listed Bat Species

•	· · · · · · · · · · · · · · · · · · ·		,	g. an urban or agricultural area with STOP HERE. No assessment requ	U	g habitat or corridors				
RIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed Method of Inspection (check all that apply) Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey										
materiou of Inspects	on (eneck an enac apply)			lusk and 1 hour after dark)	J					
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Da	y of Inspection				
32728(04)	Tulsa	US-75 NB	15840	I-44	6/11/2019	See Notes				

Bridge/Culvert Type/Structure	Note:	Presence of at ace that bats are	least one of	these indica	ators is suffi	cient	Structure Characteristics: Check all that apply				
	Live or Dead Bats Seen Guano Staining		Sounds	Odor	Concrete or stone structure with vertical crevices*	structure with expansion joints* above ground or 10 fee					
Compando		0					\boxtimes	\boxtimes	\boxtimes		
Concrete Continuous Slab	Pho	Photo Documentation of the above Y/N					Ph	noto Documentation of	of each of the above Y	/N	
Continuous Siao		No No No					No No No No			No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

For the bridge/culvert/structure listed above:

Possibl	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	Project Actions I	nclude: check all th	at apply	
Netting	etting Bridge				under the	Bridge						
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend Surface & No work above Not			Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes				\boxtimes		\boxtimes			\boxtimes			

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the heavy traffic both on and under the bridge, the cloverleaf interchange with no shoulders, and the safety concerns with crossing US-75 and/or I-44 on foot, the bridge could not be accessed. Therefore, the bridge was not fully inspected. Traffic control and a snooper would be useful to check the spaces between the concrete end walls and the bridge deck as well as in-between the bridge deck and pier caps where bats are likely to roost.

MEI A Driuge & 5	uuci	ure mspecifo	штопш	IOI AII LISTE	u Dai Spe	cies					
If all bridge, culver linking the bridge,							. •		•	•	ng habitat or corridors
BRIDGE INSPEC CULVTERT INSI BARN/SHED INS	PECT	TION: Identi	fy ALL C	Culverts ≥4 fe	et in diam	eter within	the Study Area		e removed		
Method of Inspect	ion (check all that	t apply)		☐ Ladde ace Survey		oper The sat dusk and 1		☐ Acoustic Survenafter dark)	У	
ODOT Project JP Number	Cou	inty		Road Numbe	er/Name	NBI Numb	oer Water B	ody (or	road if over road)	Date & Time of D	ay of Inspection
32728(04)	Tul	sa		Skelly Drive		Lat/Long: Drainage Ditch 36.087495, -96.005981				6/11/2019	1100
Type/Structure	Note:	ndicators: Ch Presence of at	t least one	of these indica	ators is suff	ficient	Structure Cl	naracte	ristics: Check all th	at apply	
	Live	or Dead Bats Seen	Guano	Staining	Sounds	Odor	Concrete or s structure with vertical crevio	1	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long
		0								\boxtimes	
RCB	Pho	to Documentat	tion of the	above Y/N		•		Pl	hoto Documentation	of each of the above	Y/N
		No	No	No			No		No	Yes	No
*vertical cracks, crevice				•	ccur along su	apport beams a	nd inner walls, es	specially	below a fillet – a concr	ete filling between ceil	ng and vertical beam).

Possibl Netting	le Corridors	for	Light Le Bridge	vels unde	er the	Human Di under the		ce or Traffic Project Actions Include: check all that apply				
None/	Marginal	Excellent	Bright	Low	Cave-like				Demolish/extend or Below Deck	Surface & Percussive/ Loud	No work above or below	Not known
	\boxtimes				\boxtimes					\boxtimes		

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)										
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not			
#)			Present	culverts)			Present			
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep			\boxtimes	Crevices, rough surfaces or impactions						
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span						
All guardrails			\boxtimes	All guardrails						
All expansion joints			\boxtimes	BARN/SHED STRUCTURE	Present	Inspected	Not Present			
Spaces between concrete end walls and the bridge deck			\boxtimes	Crevices, rough surfaces or impactions						
Crevices rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists						
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams						
BRIDGE/CULVERT/STRUCTURE COULD NOT due to height, traffic, or other conditions limiting ac inspect interior due to conditions limiting access, an	ccess to thou d explained	roughly inspo d in the Notes	ect all parts o							
NOTES: This RCB structure is angled up 45 deg lack of crevices.	grees and w	as not able t	o be accessed	d and fully inspected. Bats are unlikely to	roost in this	s structure d	ue to the			

•				.g. an urban or agricultural area with STOP HERE. No assessment requ	•	g habitat or corridors
CULVTERT INSP BARN/SHED INSI	TION: Identify ALL Brid PECTION: Identify ALL PECTION: Identify ALL on (check all that apply)	Culverts ≥4 feet in diam structures within the Stu	eter within the Soldy Area that po	stentially could be removed	y	
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Da	y of Inspection
32728(04)	Tulsa	I-44	Lat/Long: 36.087650, -96.004314	Unnamed Tributary to Mooser Creek (OW 2)	6/11/2019	1107

Bridge/Culvert Type/Structure	Note:	ndicators: Che Presence of at acce that bats are	least one of	f these indica	ators is suffic	cient	Structure Characteristics: Check all that apply			
	Live or Dead Bats Seen Guano Stair		Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
		0								
RCB	Photo Documentation of the above Y/N					Photo Documentation of each of the above Y/N			/N	
	No No No				No	No	Yes	No		

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possibl Netting	le Corridors	for	Light Le Bridge	vels unde	er the	Human Dander the	isturbance o Bridge	or Traffic	raffic Project Actions Include: check all that apply			
None/	Marginal	Excellent	Bright	Low	Cave-like	High Low None			Demolish/extend	Surface &	No work above	Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes	\boxtimes				\boxtimes			\boxtimes				

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)											
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not				
#)		_	Present	culverts)		_	Present				
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep			\boxtimes	Crevices, rough surfaces or impactions							
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span							
All guardrails			\boxtimes	All guardrails							
All expansion joints			\boxtimes	BARN/SHED STRUCTURE	Present	Inspected	Not Present				
Spaces between concrete end walls and the bridge deck			\boxtimes	Crevices, rough surfaces or impactions							
Crevices rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists							
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams							
BRIDGE/CULVERT/STRUCTURE COULD NOT BE FULLY INSPECTED due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes NOTES: This RCB structure makes a sharp turn to the north and was not able to be accessed and fully inspected. Bats are unlikely to roost in this structure due to the lack of crevices.											
due to the fack of crevices.											

•	· · · · · · · · · · · · · · · · · · ·		,	g. an urban or agricultural area with STOP HERE. No assessment requ	0	g habitat or corridors					
BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed											
Method of Inspecti	on (check all that apply)		r □ Snooper	\Box Thermal \Box Acoustic Surve	y						
		☐ Emergence Survey	(30 minutes at d	usk and 1 hour after dark)							
				,							
ODOT Project JP	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection					
Number	•					-					
32728(04)	Tulsa	US-75 SB	18268	49th Street	6/11/2019	1225					

Bridge/Culvert Type/Structure							Structure Characteristics: Check all that apply				
	evidei	ice that bats are	e using the s	tructure.							
	Live or Dead Bats Seen Guano Stainin		Staining	Sounds	Odor	Concrete or stone structure with vertical crevices* Top sealed expansion joints*		Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
C41		0						\boxtimes	\boxtimes		
Steel Stringer/Girder	Pho	to Documentat	ion of the at	ove Y/N	,		Photo Documentation of each of the above Y/N		/N		
No No		No	No	No			No	Yes	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	01 0110 811080 001 01 01 01 01 01 01 01 01 01 01 01 0												
Possibl	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	Project Actions Include: check all that apply				
Netting	3		Bridge			under the Bridge							
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known	
poor									or Below Deck	Percussive/ Loud	or below		
\boxtimes				\boxtimes		\boxtimes			\boxtimes				

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep			\boxtimes	Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes	\boxtimes		Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone			\boxtimes	Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to safety concerns on the bridge, the guardrails and expansion joints (between the approach asphalt and the deck asphalt) could not be fully inspected. Traffic control on US-75 would be helpful to access the bridge deck and check the guardrails and expansion joints where bats are likely to roost.

•	all bridge, culverts and structures are 1,000 feet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors and the bridge, culvert or structure to suitable foraging habitat), check this box and STOP HERE. No assessment required.												
CULVTERT INSP BARN/SHED INSI	BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed Method of Inspection (check all that apply) Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey □ Emergence Survey (30 minutes at dusk and 1 hour after dark)												
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection							
32728(04)	Tulsa	US-75 NB	18267	49th Street	6/11/2019	1230							

Bridge/Culvert Type/Structure	Bat Indicators: Check all that apply Note: Presence of at least one of these indicators is sufficient evidence that bats are using the structure.						Structure Characteristics: Check all that apply				
	Live or Dead Bats Seen		Guano	Guano Staining Sounds		Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
Steel								\boxtimes	\boxtimes		
Stringer/Girder	Photo Documentation of the above Y/N No No No		ion of the ab	ove Y/N			Photo Documentation of each of the above Y/N		/N		
Stringer/Onder				No	Yes	Yes	No				

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	01 0110 811080 001 01 01 01 01 01 01 01 01 01 01 01 0												
Possib	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	Project Actions Include: check all that apply				
Netting	3		Bridge			under the Bridge							
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known	
poor									or Below Deck	Percussive/ Loud	or below		
\boxtimes				\boxtimes		\boxtimes			\boxtimes				

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)		_	Present	culverts)		_	Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep			\boxtimes	Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes	\boxtimes		Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone			\boxtimes	Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams			

BRIDGE/CULVERT/STRUCTURE COULD NOT BE FULLY INSPECTED

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to safety concerns on the bridge, the guardrails and expansion joints (between the approach asphalt and the deck asphalt) could not be fully inspected. Traffic control on US-75 would be helpful to access the bridge deck and check the guardrails and expansion joints where bats are likely to roost.

•	all bridge, culverts and structures are 1,000 feet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors nking the bridge, culvert or structure to suitable foraging habitat), check this box and STOP HERE. No assessment required.											
BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts \ge 4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed												
Method of Inspection (check all that apply) ⊠ Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey □ Emergence Survey (30 minutes at dusk and 1 hour after dark)												
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day of Inspection							

ODOTTIO	County	Roda I (dilibel/I (dilie	1 IDI I I IIIIINCI	vater body (or road it over road)	Dute & Time of Du	y of mspection
Number						
32728(04)	Tulsa	US-75 SB	18255	46th Street	6/11/2019	1257
Bridge/Culvert	Bat Indicators: Check all t	hat apply	St	tructure Characteristics: Check all th	at apply	
Type/Structure	Note: Presence of at least on	e of these indicators is suff	ficient			

Bridge/Culvert	Bat In	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply			
Type/Structure	Note: Presence of at least one of these indicators is sufficient									
	evidence that bats are using the structure.									
	Live or Dead Bats Seen Guano		Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
C41		0								
Steel Stringer/Girder	Photo Documentation of the above Y/N						Photo Documentation of each of the above Y/N			
Stringer/Girder		No	No No			No	No	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	21 411 N1145 9 441 1 41 9 1 4 4 4 4 4 4 4 4 4 4 4 4											
Possible Corridors for Light Levels under the H			Human Di	isturbance (or Traffic	Project Actions Include: check all that apply						
Netting Bridge				under the	Bridge							
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes				\boxtimes		\boxtimes			\boxtimes			

Characteristics of the above Bridge/Culvert/Stri	icture and	Whether F	'ULLY Insp	ected during Field Studies (Check all tha	ıt apply)		
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep			\boxtimes	Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes	\boxtimes		Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone				Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams			
BRIDGE/CULVERT/STRUCTURE COULD NOT due to height, traffic, or other conditions limiting ac inspect interior due to conditions limiting access, an	ccess to tho	roughly inspe	ect all parts o	f bridge due to inundation or other conditi	ons limiting	g access to th	oroughly
NOTES: Due to safety concerns on the bridge, the inspected. Traffic control on US-75 would be help	•	•					•

•	·		•	.g. an urban or agricultural area with STOP HERE. No assessment requ	<i>U</i> ,	g habitat or corridors
CULVTERT INSE BARN/SHED INS	TION: Identify ALL Brid PECTION: Identify ALL (PECTION: Identify ALL) (PECTION: Identify ALL) (Identify ALL) (Identify ALL) (Identify ALL)	Culverts ≥4 feet in diamestructures within the Stu ☐ Visual ☐ Ladden	eter within the Soldy Area that po	otentially could be removed	y	
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	of Inspection
32728(04)	Tulsa	US-75 NB	18254	46th Street	6/11/2019	1300
Duid as / Culment	D-4 I 124 Ch11141	- A l	G4.	our strong Chang storigtion. Charle all the	-4 omulu	_

Bridge/Culvert	Bat Indicators: Check all that apply						Structure Characteristics: Check all that apply			
Type/Structure	Note: Presence of at least one of these indicators is sufficient									
	evidence that bats are using the structure.									
	Live or Dead Bats Seen		Guano	Staining	taining Sounds Odor		Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long
Start.		0						\boxtimes	\boxtimes	
Steel Stringer/Girder	Phot	Photo Documentation of the above Y/N					Photo Documentation of each of the above Y/N			/N
Stringer/Onder	No No No					No	No	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possible Corridors for Light Levels under the			Human D	isturbance (or Traffic	Project Actions Include: check all that apply						
Netting Bridge			under the	Bridge								
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes				\boxtimes		\boxtimes			\boxtimes			

Characteristics of the above Bridge/Culvert/Structure and Whether FULLY Inspected during Field Studies (Check all that apply)

BRIDGES (this includes any RCBs with an NBI #)	Present	Inspected	Not Present	CULVERTS (do not include bridge-size culverts)	Present	Inspected	Not Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep			\boxtimes	Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes	\boxtimes		Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to safety concerns on the bridge, the guardrails and expansion joints (between the approach asphalt and the deck asphalt) could not be fully inspected. Traffic control on US-75 would be helpful to access the bridge deck and check the guardrails and expansion joints where bats are likely to roost.

0	· · · · · · · · · · · · · · · · · · ·		`	.g. an urban or agricultural area with STOP HERE. No assessment requ	Ů,	g habitat or corridors
CULVTERT INSE BARN/SHED INS	TION: Identify ALL Brid PECTION: Identify ALL PECTION: Identify ALL PECTION: Identify ALL ion (check all that apply)	Culverts ≥4 feet in diamestructures within the Stu	eter within the Soldy Area that po	otentially could be removed	y	
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	of Inspection
32728(04)	Tulsa	US-75	18005	Cherry Creek	6/11/2019	1337
Bridge/Culvert	Rat Indicators: Chack all th	not annly	St	ructura Charactaristics. Chack all the	at annly	

Bridge/Culvert	Bat In	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply				
Type/Structure		Presence of at			ators is suffic	cient					
	eviden	ce that bats are	e using the s	tructure.							
	Live o	or Dead Bats Seen	Guano	Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
		0							\boxtimes	\boxtimes	
Triple cell RCB	Photo Documentation of the above Y/N			ove Y/N			Photo Documentation of each of the above Y/N				
		No	No	No			No No Yes Yes			Yes	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	2 110 K110 B 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											
Possib	le Corridors	for	Light Le	vels unde	er the	Human Di	isturbance (or Traffic	Project Actions Include: check all that apply			
Netting	Netting Bridge					under the	Bridge					
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend Surface & No work			Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes					\boxtimes							\boxtimes

Characteristics of the above Bridge/Culvert/Stru	icture and	Whether F	'ULLY Insp	ected during Field Studies (Check all tha	t apply)		
BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)		_	Present	culverts)		_	Present
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep			\boxtimes	Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed			\boxtimes	Spaces between concrete or stone end walls and span			
All guardrails			\boxtimes	All guardrails			
All expansion joints			\boxtimes	BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck			\boxtimes	Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams			\boxtimes	Cracked or exposed beams			
BRIDGE/CULVERT/STRUCTURE COULD NOT due to height, traffic, or other conditions limiting ac inspect interior due to conditions limiting access, an	cess to tho	roughly insp	ect all parts o	f bridge due to inundation or other conditi	ons limitin	g access to th	oroughly
NOTES: Due to the length of the structure as we	ll as the ea	st section of	the RCB is o	outside of the study footprint, the structure	could not	be fully insp	ected.

0	· ·		*	g. an urban or agricultural area with STOP HERE. No assessment requ		g habitat or corridors
CULVTERT INSP BARN/SHED INSI	TION: Identify ALL Brid PECTION: Identify ALL (PECTION: Identify ALL (ion (check all that apply)	Culverts ≥4 feet in diams structures within the Stu	eter within the S udy Area that po	stentially could be removed	V	
	(u u u.pp-3)			lusk and 1 hour after dark)	J	
ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
32728(04)	Tulsa	I-44 EB	19479	38th Street & TSU Railroad	6/11/2019	1400

Bridge/Culvert	Bat In	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply				
Type/Structure		Presence of at			ators is suffic	cient					
	eviden	ce that bats are	e using the s	tructure.							
	Live o	or Dead Bats Seen	Guano	Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
C41		0						\boxtimes			
Steel Stringer/Girder	Photo Documentation of the above Y/N					Pl	noto Documentation of	of each of the above Y	/N		
Stringer/Onder	No No No						No Yes Yes No			No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	1 110 N.1 10 10 10 10 10 10 10 10 10 10 10 10 10											
Possib	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	Project Actions Include: check all that apply			
Netting	tting Bridge under the Brid						Bridge					
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None				Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes				\boxtimes		\boxtimes						\boxtimes

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes	\boxtimes		Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height of the bridge and safety issues on the bridge deck, the bridge could not be fully inspected. A snooper would be useful to check the spaces between the bridge deck and pier caps where bats are likely to roost. Also, traffic control on I-44 would be helpful to access the bridge deck and check the guardrails and expansion joints where bats are likely to roost.

	ore from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors ng habitat), check this box and STOP HERE. No assessment required. \Box
BRIDGE INSPECTION: Identify ALL Bridges by N CULVTERT INSPECTION: Identify ALL Culverts BARN/SHED INSPECTION: Identify ALL structure	
	nal □ Ladder □ Snooper □ Thermal □ Acoustic Survey ergence Survey (30 minutes at dusk and 1 hour after dark)

ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
32728(04)	Tulsa	I-44 WB	19471	38th Street & TSU Railroad	6/11/2019	1416

Bridge/Culvert	Bat In	dicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply				
Type/Structure	Note:	Presence of at	least one of	these indica	ators is suffi	cient					
	eviden	ce that bats are	e using the s	tructure.							
	Live o	Live or Dead Bats Seen Guano Sta		Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
Start.									\boxtimes		
Steel Stringer/Girder	Photo Documentation of the above Y/N						Photo Documentation of each of the above Y/N			/N	
Stringer/Onder	No No No						No Yes Yes No				

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	1 110 N.110 B. (1 01.1 01.1 01.1 01.1 01.1 01.1 01.1											
Possib	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	Project Actions Include: check all that apply			
Netting Bridge u					under the	Bridge						
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend Surface & No work above I			Not known
poor									or Below Deck	Percussive/ Loud	or below	
\boxtimes				\boxtimes		\boxtimes						\boxtimes

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes	\boxtimes		Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height of the bridge and safety issues on the bridge deck, the bridge could not be fully inspected. A snooper would be useful to check the spaces between the bridge deck and pier caps where bats are likely to roost. Also, traffic control on I-44 would be helpful to access the bridge deck and check the guardrails and expansion joints where bats are likely to roost.

•	f all bridge, culverts and structures are 1,000 feet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors inking the bridge, culvert or structure to suitable foraging habitat), check this box and STOP HERE. No assessment required.											
CULVTERT INSP BARN/SHED INSI	BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed Method of Inspection (check all that apply) Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey □ Emergence Survey (30 minutes at dusk and 1 hour after dark)											
ODOT Project JP County Road Number/Name NBI Number Water Body (or road if over road) Date & Time of Day of Inspection Number County Number County County												
32728(04)	32728(04) Tulsa W. 51st Street 15755 TSU Railroad 6/11/2019 1804											

Bridge/Culvert Type/Structure	Bat Indicators: Check all that apply Note: Presence of at least one of these indicators is sufficient						Structure Characteristics: Check all that apply				
Type/Structure	evidence that bats are using the structure.										
	Live or Dead Bats		Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
Compute		0					\boxtimes				
Concrete Continuous Span	Photo Documentation of the above Y/						Photo Documentation of each of the above Y/N			T/N	
Continuous Span		No No No					No	No	Yes	No	

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

	TO THE NITE OF THE PROPERTY AND THE												
Possib	le Corridors	for	Light Le	Levels under the Human Disturbance or Traffic					Project Actions Include: check all that apply				
Netting	3		Bridge			under the Bridge							
None/	Marginal	Excellent	Bright	Low	Cave-like			Demolish/extend or Below Deck	Surface & Percussive/ Loud	No work above or below	Not known		
poor									of Below Beek	T CTCu35TVC/ Loud	or below		
	\boxtimes			\boxtimes		\boxtimes					\boxtimes		

BRIDGES (this includes any RCBs with an NBI	BRIDGES (this includes any RCBs with an NBI Present Inspected		Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height of the bridge, safety issues on the bridge deck and crossing the railroad, the bridge could not be fully inspected. A snooper would be useful to inspect the spaces between the bridge deck and the pier caps as well as the spaces between the concrete end walls and the bridge deck. Traffic control on the bridge deck to check the guardrails and expansion joints would also be helpful.

•	f all bridge, culverts and structures are 1,000 feet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors inking the bridge, culvert or structure to suitable foraging habitat), check this box and STOP HERE. No assessment required.											
BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed Method of Inspection (check all that apply) ⊠ Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey												
□ Emergence Survey (30 minutes at dusk and 1 hour after dark)												
ODOT Project JP County Road Number/Name NBI Number Water Body (or road if over road) Date & Time of Day of Inspection												
Number 32728(04)	Tulsa	I-44 WB	20294	TSU Railroad	6/11/2019	1811						
32120(UT)	2/28(04) Tulsa 1-44 WB 20294 TSU Railroad 6/11/2019 1811											

Bridge/Culvert Type/Structure							Structure Characteristics: Check all that apply				
	Live or Dead Bats Seen Guano Staining			Staining	Sounds	Odor	Concrete or stone structure with vertical crevices* Top sealed expansion joints* Structure ≥4 feet above ground or water Structure ≥4 feet above ground or water				
Comente							\boxtimes	\boxtimes	\boxtimes		
Concrete Continuous Slab	Photo Documentation of the above Y/N					Photo Documentation of each of the above Y/N			/N		
Continuous Stab	No No No					No	No	Yes	No		

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	201 4110 21145 47 4411 41 41 41 41 41 41 41 41 41 41 41 4												
Possibl	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (urbance or Traffic Project Actions Include: check all that apply					
Netting	3		Bridge			under the Bridge							
None/	Marginal	Excellent	Bright	Low	Cave-like	High			Demolish/extend	Surface &	No work above	Not known	
poor								or Below Deck	Percussive/ Loud	or below			
\boxtimes				\boxtimes		\boxtimes			\boxtimes				

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height of the bridge, safety issues on the bridge deck and crossing the railroad, the bridge could not be fully inspected. A snooper would be useful to inspect the spaces between the bridge deck and the pier caps as well as the spaces between the concrete end walls and the bridge deck. Traffic control on the bridge deck to check the guardrails and expansion joints would also be helpful.

ODOT Project JP County Road Number/Name NBI Number Water Body (or road if over road) Date & Time of Day of Inspection										
□ Emergence Survey (30 minutes at dusk and 1 hour after dark)										
Method of Inspection (check all that apply)	⊠ Visual □ Laddeı	r Snooper	☐ Thermal ☐ Acoustic Surve	v						
BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed										
If all bridge, culverts and structures are 1,000 feet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors inking the bridge, culvert or structure to suitable foraging habitat), check this box and STOP HERE. No assessment required.										

ODOT Project JP	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
Number						
32728(04)	Tulsa	I-44 EB	12827	TSU Railroad	6/11/2019	1816

Bridge/Culvert	Bat Ir	Bat Indicators: Check all that apply					Structure Characteristics: Check all that apply			
Type/Structure	Note: Presence of at least one of these indicators is sufficient					cient				
	evidence that bats are using the structure.									
	Live or Dead Bats Seen Guano		Guano Staining Sounds Odor		Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long		
Compute							\boxtimes	\boxtimes	\boxtimes	
Concrete Continuous Slab	Phot	to Documentat	ion of the at	ove Y/N	/N		Photo Documentation of each of the above Y/N			/N
Continuous Siao	No No N			No			Yes	Yes	Yes	No

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possibl	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	ic Project Actions Include: check all that apply				
Netting	tting Bridge under the Bridge												
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known	
poor									or Below Deck	Percussive/ Loud	or below		
\boxtimes				\boxtimes		\boxtimes			\boxtimes				

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height of the bridge, safety issues on the bridge deck and crossing the railroad, the bridge could not be fully inspected. A snooper would be useful to inspect the spaces between the bridge deck and the pier caps as well as the spaces between the concrete end walls and the bridge deck. Traffic control on the bridge deck to check the guardrails and expansion joints would also be helpful.

0			,	g. an urban or agricultural area with STOP HERE. No assessment requi	nout suitable foraging habitat or corridor ired.
CULVTERT INSI	TION: Identify ALL Brid PECTION: Identify ALL PECTION: Identify ALL	Culverts ≥4 feet in diam	eter within the S	tudy Area tentially could be removed	
Method of Inspect	ion (check all that apply)		1	☐ Thermal ☐ Acoustic Survey lusk and 1 hour after dark)	y
ODOT Project JP	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day of Inspection

ODOT Project JP Number	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
32728(04)	Tulsa	I-44 EB On-Ramp	15769	TSU Railroad	6/11/2019	1822

Bridge/Culvert	Bat Ir	ndicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply			
Type/Structure	Note:	Presence of at	least one of	these indica	ators is suffi	cient				
	evider	nce that bats are	e using the s	tructure.						
	Live	or Dead Bats Seen	Guano	Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long
Compute		0					\boxtimes		\boxtimes	
Concrete Continuous Slab	Photo Documentation of the above Y/N						Pł	noto Documentation	of each of the above Y	/N
Continuous Siao	No No No					Yes	Yes No Yes No			

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possibl	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	Project Actions Include: check all that apply				
Netting	ting Bridge under the Bridge												
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known	
poor									or Below Deck	Percussive/ Loud	or below		
\boxtimes				\boxtimes		\boxtimes			\boxtimes				

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height of the bridge, safety issues on the bridge deck and crossing the railroad, the bridge could not be fully inspected. A snooper would be useful to inspect the spaces between the bridge deck and the pier caps as well as the spaces between the concrete end walls and the bridge deck. Traffic control on the bridge deck to check the guardrails and expansion joints would also be helpful.

ODOT Project JP	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day of Inspection
		☐ Emergence Survey	(30 minutes at c	lusk and 1 hour after dark)	
Method of Inspecti	on (check all that apply)			☐ Thermal ☐ Acoustic Surve	y
CULVTERT INSP	FION: Identify ALL Brid ECTION: Identify ALL PECTION: Identify ALL	Culverts ≥4 feet in diam	eter within the S	tudy Area tentially could be removed	
0	-		,	g. an urban or agricultural area with STOP HERE. No assessment requi	nout suitable foraging habitat or corridors ired.

ODOT Project JP	County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection
Number						
32728(04)	Tulsa	Skelly Drive	15763	TSU Railroad	6/11/2019	1826

Bridge/Culvert	Bat Ir	ndicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply			
Type/Structure	Note:	Presence of at	least one of	these indica	ators is suffi	cient				
	evider	nce that bats are	e using the s	tructure.						
	Live	or Dead Bats Seen	Guano Staining Sounds Odor		Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long	
Comonata		0					\boxtimes		\boxtimes	
Concrete Continuous Slab	Photo Documentation of the above Y/N						Pł	noto Documentation	of each of the above Y	/N
Continuous Siao	No No No					Yes	Yes No Yes No			

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

_ 01 0110	01 011 011 011 011 011 011 011 011 011												
Possib	le Corridors	for	Light Le	vels unde	er the	Human D	isturbance (or Traffic	Fic Project Actions Include: check all that apply				
Netting	ng Bridge under the Bridge												
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known	
poor									or Below Deck	Percussive/ Loud	or below		
	\boxtimes			\boxtimes		\boxtimes						\boxtimes	

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide $\& \ge 4$ " deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height of the bridge, safety issues on the bridge deck and crossing the railroad, the bridge could not be fully inspected. A snooper would be useful to inspect the spaces between the bridge deck and the pier caps as well as the spaces between the concrete end walls and the bridge deck. Traffic control on the bridge deck to check the guardrails and expansion joints would also be helpful.

No

NEPA Bridge & Structure Inspection Form for All Listed Bat Species

•	Il bridge, culverts and structures are 1,000 feet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors ting the bridge, culvert or structure to suitable foraging habitat), check this box and STOP HERE. No assessment required.							
CULVTERT INSP BARN/SHED INSI	FION: Identify ALL Brid ECTION: Identify ALL PECTION: Identify ALL on (check all that apply)	Culverts ≥4 feet in diame structures within the Stu	eter within the S udy Area that po	tentially could be removed ☐ Thermal ☐ Acoustic Surve	y			
		☐ Emergence Survey	(30 minutes at d	usk and 1 hour after dark)				
ODOT Project JP County Number Road Number/Name NBI Number Water Body (or road if over road) Date & Time of Day of Inspection								
32728(04)	Tulsa	I-44 EB	20326	Arkansas River	6/11/2019	1830		

Bridge/Culvert	Bat In	ndicators: Ch	eck all that	apply			Structure Characteristics: Check all that apply			
Type/Structure	Note: Presence of at least one of these indicators is sufficient					cient				
	evidence that bats are using the structure.									
	Live	or Dead Bats Seen	Guano	Staining	Sounds	Odor	Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long
Prestressed		0					\boxtimes		\boxtimes	
Concrete	Photo Documentation of the above Y/N					Photo Documentation of each of the above Y/N				

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Yes

No

Yes

For the bridge/culvert/structure listed above:

No

No

No

Stringer/Girder

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Possib	le Corridors	for	Light Le	vels unde	inder the Human Disturbance or Traffic			Project Actions I	Include: check all that apply			
Netting	3		Bridge			under the Bridge						
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known
poor									or Below Deck	Percussive/ Loud	or below	
	\boxtimes		\boxtimes				\boxtimes		\boxtimes			

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

BRIDGE/CULVERT/STRUCTURE COULD NOT BE FULLY INSPECTED

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

 \boxtimes

NOTES: Due to the height, extension over a perennial stream and safety on the bridge deck, the bridge could not be fully inspected. A snooper would be useful to inspect the spaces between the bridge deck and the pier caps as well as the spaces between the concrete end walls and the bridge deck. Traffic control on the bridge deck to check the guardrails and expansion joints would also be helpful.

fall bridge, culverts and structures are 1,000 feet or more from suitable bat habitat (e.g. an urban or agricultural area without suitable foraging habitat or corridors								
nking the bridge, culvert or structure to suitable foraging habitat), check this box and STOP HERE. No assessment required.								
BRIDGE INSPECTION: Identify ALL Bridges by NBI # (include RCB bridges) CULVTERT INSPECTION: Identify ALL Culverts ≥4 feet in diameter within the Study Area BARN/SHED INSPECTION: Identify ALL structures within the Study Area that potentially could be removed Method of Inspection (check all that apply) Visual □ Ladder □ Snooper □ Thermal □ Acoustic Survey								
Method of Inspection (check all that apply)				У				
	☐ Emergence Survey	(30 minutes at o	dusk and 1 hour after dark)					
ODOT Project JP County	Road Number/Name	NBI Number	Water Body (or road if over road)	Date & Time of Day	y of Inspection			
Number					_			
32728(04) Tulsa	I-44 WB	20580	Arkansas River	6/11/2019	1835			

Bridge/Culvert Type/Structure	Bat Indicators: Check all that apply Note: Presence of at least one of these indicators is sufficient evidence that bats are using the structure.					cient	Structure Characteristics: Check all that apply			
	Live or Dead Bats Seen		Guano	Staining	Sounds Odor		Concrete or stone structure with vertical crevices*	Top sealed expansion joints*	Structure ≥4 feet above ground or water	Box structure 5 to 10 feet tall & > 300 feet long
Prestressed		Number seen					\boxtimes		\boxtimes	
Concrete Stringer/Girder	Pho	Photo Documentation of the above Y/N					Photo Documentation of each of the above Y/N			
Sumger/Onder		No	No	No			Yes	No	Yes	No

^{*}vertical cracks, crevices, or joints 0.5 to 1.25 inches wide (cracks may occur along support beams and inner walls, especially below a fillet – a concrete filling between ceiling and vertical beam).

Possibl Netting	le Corridors S	for	Light Le Bridge	vels unde	er the	Human Disturbance or Traffic under the Bridge			Project Actions Include: check all that apply			
None/	Marginal	Excellent	Bright	Low	Cave-like	High	Low	None	Demolish/extend	Surface &	No work above	Not known
poor									or Below Deck	Percussive/ Loud	or below	
	\boxtimes		\boxtimes				\boxtimes		\boxtimes			

BRIDGES (this includes any RCBs with an NBI	Present	Inspected	Not	CULVERTS (do not include bridge-size	Present	Inspected	Not
#)			Present	culverts)			Present
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	\boxtimes			Crevices, rough surfaces or impactions			
All crevices >12" deep & not sealed	\boxtimes			Spaces between concrete or stone end walls and span			
All guardrails	\boxtimes			All guardrails			
All expansion joints	\boxtimes			BARN/SHED STRUCTURE	Present	Inspected	Not Present
Spaces between concrete end walls and the bridge deck	\boxtimes			Crevices, rough surfaces or impactions			
Crevices, rough surfaces or impactions in concrete or stone	\boxtimes			Spaces between walls, ceiling joists			
Vertical surfaces on concrete I- beams	\boxtimes			Cracked or exposed beams			

due to height, traffic, or other conditions limiting access to thoroughly inspect all parts of bridge due to inundation or other conditions limiting access to thoroughly inspect interior due to conditions limiting access, and explained in the Notes

NOTES: Due to the height, extension over a perennial stream and safety on the bridge deck, the bridge could not be fully inspected. A snooper would be useful to inspect the spaces between the bridge deck and the pier caps as well as the spaces between the concrete end walls and the bridge deck. Traffic control on the bridge deck to check the guardrails and expansion joints would also be helpful.

4. ANALYSIS OF EFFECTS

4.1 Direct Effects

+.1 Direct Effects		
Species/ Resource	Habitat impacts expected from project activities	Describe specific ACTIONS of the project and the results of those actions on species habitats, including indirect impacts to prey or drinking water, as well as improvements to habitat as a result of specific actions. If habitat within the action area identified above will not be impacted, describe why.
Piping Plover		Field work was conducted on September 30 and October 1, 2020 to delineate the Arkansas River during normal weather conditions. Exposed sandbars that could be potential roosting and loafing habitat for the Piping Plover were observed. Widening of the Arkansas River bridges (NBIs 20580 and 20326) is planned in Work Package 3. Construction activities within or adjacent to the OHWM of the Arkansas River could impact plover habitat, if they were using the river as temporary stopover foraging and loafing habitat during migration. Temporary impacts to the species (due to disturbance) may occur from the associated noise and presence of workers and equipment during construction.
American Burying Beetle		Impacts from construction include vegetation removal, soil disturbance through ground clearing, and use of vehicles and heavy equipment. These actions will result in permanent conversion of some portions of suitable ABB habitat to pavement and/or maintained ROW. Some of the habitat impacts, such as vegetation damage due to construction traffic and additional temporary ROW, are expected to be temporary in nature, as native perennial vegetation will be allowed to regrow. If construction occurs at night during the ABB active season, temporary impacts to the species (due to disturbance) may occur from the associated noise and presence of workers and equipment.
Northern Long-eared Bat		Potential habitat occurs within the study footprint in the form of live and dead trees with a diameter at breast height (DBH) of greater than 3 inches, linear treed fencerows, tree-lined riparian forest corridors of OWs 1-4 and OWs 6, 7 and 9, culverts, barns and sheds along US-75, and multiple bridges that occur within the study footprint as well as within 1 mile of the study footprint. These features provide potential foraging and/or summer roosting sites for the NLEB. This species feeds primarily on moths, flies, leafhoppers, caddisflies, and beetles they capture while flying through the understory of forests. The habitat within the alluvial terrace along the Arkansas River, the dense wooded habitat south of the I-44/US-75 interchange, and the riparian habitat along

Mooser Creek provides suitable foraging habitat for this species. Project actions may result in direct loss of roosting habitat due to tree clearing required for constructing the proposed E. Frontage Road east of US-75 in excess of 300-ft, as well as constructing Skelly Drive on an offset alignment to the south. Multiple bridges throughout the footprint will be impacted during the construction phase of the project. However, after construction is complete, these structures and remaining trees will continue to provide potential roosting and foraging habitat. Temporary impacts to the species (due to disturbance) may occur during construction from construction activities, and
from the associated noise and presence of workers and equipment. However, these disturbance impacts will be short terms since the westernoons are remaining traces and
short-term since the watercourse, remaining trees, and new/improved bridges will provide potential roosting and foraging habitat after construction is complete.

4.2 Indirect Effects

Long-term habitat alterations

Species/ Resource	Identify long-term, permanent changes in habitat
Piping Plover	Some siltation could be a potential indirect effect. Stormwater best management practices (BMPs) will be implemented during the widening of the I-44 bridges over the Arkansas River to help prevent sedimentation from traveling downstream. The sandbars provide potential foraging and loafing habitat for the Piping Plover during migration and are located both upstream and downstream from the proposed project. This habitat may be impacted by sedimentation. No long-term habitat alterations are anticipated, as the Arkansas River will continue
	to provide potential habitat after construction of the bridge is complete.
American Burying	Long-term habitat alterations include a relatively minor reduction in the amount
Beetle	of overall habitat available to the ABB (from the conversion of potential habitat
	to roadway or to a maintained state within the proposed right-of-way limits). No
	other indirect and long-term habitat alterations are expected from the project.
Northern Long-eared	NLEB summer habitat is not limited or in short supply; however, long-term
Bat	habitat alterations are expected from the removal of a large number of trees
	within the study footprint that could potentially function as roosting sites.

<u>Indirect land use impacts</u>

Land adjacent to US-75 and south of the interchange may become more developed with residential and/or commercial properties due to increased access to the area and could create additional habitat loss. No other indirect land use impacts are expected.

4.3 Interrelated and Interdependent Actions and Activities

The 2002 EA originally included approximately 10 miles of US-75 from SH-67 to I-44 in Tulsa County, Oklahoma. Completed projects within the extent of the original EA include the US-75/W. 71st Street interchange which included pavement for a future 8-lane US-75 facility with four through lanes in each direction, approximately 3,000-feet north and south of 71st Street, and a 76-foot-wide W. 71st Street span bridge over US-75. In 2010, the at-grade US-75 intersection with W. 111th Street was replaced with an interchange and an 80-foot-wide W. 111th Street bridge over US-75. The US-75 bridges over W. 81st Street are scheduled to be replaced in FFY 2022 according to the ODOT 8-year Construction Work Plan.

The construction of the entire I-44/US-75 reconstruction project is split into several work packages to fall within budgetary constraints. Work Packages 2 and 5 are tied and will be constructed simultaneously. A Reevaluation was completed for Work Package 1 in 2020 and the project has been awarded for construction. Work packages 2, 3, 4, and 5 will be authorized with an additional NEPA reevaluation upon completion of proposed ROW plans.

All work packages are needed to achieve the ultimate goal of reconstructing the I-44/US-75 interchange.

USFWS TAILS Number:	02EKOK00-2019-SLI-1945
ODOT Project JP Number:	33788(08)(09)(10)(11)

	CONCI	LUSION		ESA SECTION 7		NOTES AND DOCUMENTATION Check $$ all that apply				
SPECIES / DESIGNATED CRITICAL HABIT	Species Habitat present within the action area	Project Activities expected to impact habitat	No May affect, not likely to Effect adversely affect		May affect, Likely to adversely affect	Field Studies	ONHI database / ABB	USFWS occupied waterbodies & watersheds	Whooping Crane Migration Corridor	
American Burying Beetle		\boxtimes			Project u the final	ses the BO for 4(d) rule	\boxtimes	\boxtimes		
Northern long-eared bat				☐ ☐ Final Effect Analysis and Determination covered in the Programmatic BA&BO						
				\boxtimes	Project u the final	ses the BO for 4(d) rule				
Piping Plover	\boxtimes	\boxtimes			\boxtimes		\boxtimes	\boxtimes		
Red Knot			\boxtimes				×	\boxtimes		

CONCLUSIONS

No Effect	Red Knot
May Affect	American Burying Beetle, Northern long-eared bat
May affect, not likely to adversely affect	Piping Plover
May affect, likely to adversely affect	
Appropriate Effect Determination for	
ABB has been made under the BO for the	
final 4(d) rule	
Appropriate Effect Determination has	
been made under the FHWA	
NLEB/Ibat Programmatic BA & BO	
Appropriate Effect Determination for	
NLEB has been made under the BO for	
the final 4(d) rule	

RECOMMENDED AVOIDANCE AND MINIMIZATION MEASURES

Suitable habitat for the **American Burying Beetle** occurs within the immediate vicinity of the proposed project. In order to minimize adverse impacts to the ABB, the following conservation measures will be implemented:

- a) The areas of suitable habitat will be field mapped.
- b) The amount of ground disturbance to suitable ABB habitat within the construction footprint will be minimized to only what is necessary for project construction.
- c) Following construction, areas of ground disturbance outside of the safety clear zone will be revegetated with native plant species where applicable and practicable. Areas where revegetation with native plant species is not practicable will be revegetated with more traditional planting such as solid slab sodding.
- d) Pollution Prevention Requirements as specified by the Oklahoma Department of Environmental Quality General Permit OKRl0 for Storm Water Discharges shall be implemented. Additionally, all equipment will be fueled, and all fuel and motor vehicle oil will be stored outside ABB habitat.
- e) The use of artificial lighting will be minimized. If night construction is necessary, direct light will be shielded to the work area and prevent light from projecting upwards. A special provision will be included in the project contract which outlines approved lighting for use during night work.
- f) Carcasses and trash will continuously be removed from any permanent and temporary construction rights-of-way, throughout the duration of the project.

If bridge and culvert demolition, repair, retrofit, maintenance or rehabilitation is to occur during listed bat species' active/maternity season (between April 1 and November 15), ODOT Environmental Programs Division will thoroughly inspect the structures or conduct an acoustic survey of the existing structures to ensure any listed bats are not using the structures, within two years prior to construction. The inspection of the bridge and culverts, and the survey to determine the presence of listed bats potentially using the bridge will be scheduled between May 15 and August 15. If evidence of use by listed bat species is observed, then the bridge demolition, repair, retrofit, maintenance, and/or rehabilitation and culvert extension or removal will be performed between November 16 and March 31. If bridge demolition, repair, retrofit, maintenance, and/or rehabilitation and culvert extension or removal must occur between April 1 and November 15, the ODOT will re-initiate consultation with the USFWS. If bridge inspection and/or

survey is positive, all bridge demolition, repair, retrofit, maintenance, and/or rehabilitation and culvert extension or removal will be limited to the bat's inactive season.

5. BALD AND GOLDEN EAGLE PROTECTION ACT ASESSMENT

5.1. Bald Eagle Assessment

The Bald Eagle (*Haliaeetus leucocephalus*) is a large predatory bird protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Activities that would disturb eagles are prohibited under the Bald and Golden Eagle Protection Act. "Disturb" means to agitate an eagle to the degree that causes or is likely to (1) cause injury, (2) interfere with breeding, feeding or sheltering behavior, or (3) nest abandonment.

Potential Bald Eagle Habitat Present	w/in NEPA Footprint	w/in 660 ft Buffer of NEPA Footprint	DO NOT LEAVE BLANK
Presence of Cottonwood, Sycamore, Pecan or Pine	×	×	Large super canopy tree species [i.e., pecan (<i>Carya illinoinensis</i>)] were observed throughout the large forested tracts south of the I-44 interchange and adjacent to US-75. American sycamores (<i>Platanus occidentalis</i>) were observed primarily within riparian areas of stream channels in the NEPA footprint and most likely throughout the 660-foot buffer.
Open foraging areas with large trees			The alluvial terraces of the Arkansas River contain large trees within the NEPA Footprint and 660-foot buffer. Bald eagles could potentially use these trees to perch or loaf during hunting activities. These trees are smaller in size likely due to being inundated during periods of heavy rainfall or flooding events.
Distance to closest perennial water body	River or crosses		The Arkansas River is within the study area and is a large perennial water body that the eastern section of the NEPA Footprint
	Stream or Pond	crosses	crosses. In addition, Mooser Creek is a perennial stream that crosses the project footprint.
Potential Bald Eagle Nests Observed			No potential bald eagle nests were observed during the field investigation.

Potential Bald Eagle Habitat Present	w/in NEPA Footprint	w/in 660 ft Buffer of NEPA Footprint	DO NOT LEAVE BLANK	
Bald Eagles Observed in the general vicinity			Two bald eagles (2 adults) were observed soaring within the 660-foot buffer and the NEPA Footprint during the September 30, 2020 field investigation. Both individuals soared in a general north to south direction along the west bank of the Arkansas River and over the bridges.	
General Description of Bald Eagle Nesting Habitat and Impact Determination, within the NEPA Footprint and within 660-ft of the NEPA Footprint	Suitable bald eagle habitat occurs along the west side of the Arkansas River within the 660-foot buffer and within the NEPA Footprint. Suitable habitat was also observed along Mooser Creek both west and east of US-75. A small section of potential bald eagle habitat also occurs in the far east section of the 660-foot buffer near the RC park on Union Ave. The Oklahoma Natural Heritage Inventory (ONHI) reported ten (10) occurrences of bald eagles within 5 miles of the NEPA Footprint. Therefore, potential roosting and nesting habitats (approximately 10.3 acres) occur			
Station #s for Buffered Bald Eagle Habitat	within the NEPA Footprint and the 660-foot buffer. 51st St. (STA.557+50 to 566+50) US-75 (STA.556+22 to 561+25) Frontage Rd (STA.184+00 to 192+50) Skelly Dr. (STA.570+00 to 603+50; and STA.622+00 to 641+00) Ramp E1 STA.56+00 to 74+00; and STA.84+00 to 90+00) Ramp E6 (STA.165+00 to 90+00) Ramp E3 (STA. 86+00 to 90+00) Ramp E4 (STA. 165+00 to 172+00) Ramp E5 (STA.74+00 to 91+00) Ramp E8 (STA.60+00 to 83+00)			

In order to avoid impacts to Bald Eagles, if Bald Eagles or their habitat are observed during the biological assessment, a survey for eagles and their nests will be conducted within 660 feet of the work zone, during the winter prior to, and within one year of, the start of construction. If a nest is found, appropriate conservation measures based on the National Bald Eagle Management Guidelines will be implemented.

6. MIGRATORY BIRD TREATY ACT (MBTA) ASSESSMENT

6.1 Structure Assessment

Cliff Swallows (*Petrochelidon pyrrhonota*) and Barn Swallows (*Hirundo rustica*) are small colonial and semi-colonial nesting birds protected by the federal Migratory Bird Treaty Act. Barn Swallows use man-made structures for nesting and live in close association with humans. Both species commonly use bridges and culverts in Oklahoma for nesting. Other migratory birds can also nest on transportation structures.

TI COATT			
Identify ALL structures including pipe culverts and	Approx.	Approx.	Approx.
whether positive or negative for migratory birds	Number of	Number of	Number
(identify named streams where possible rather than just	Cliff	Barn	of Eastern
FS#). Provide shapefiles and map of structures	Swallow	Swallow	Phoebe
identifying pos/neg swallow structures.	Nests	Nests	Nests
S. Olympia Avenue, Mooser Creek, NBI 11970	None	2 (Past Use)	None
W. 61st Street, US-75, NBI 16564	None	None	None
US-75 SB On-Ramp, Mooser Creek & Skelly Drive,	None	1 (Present	None
NBI 15843		Use)	
US-75 SB, Mooser Creek & Skelly Drive, NBI 15832	None	None	None
US-75 NB, Mooser Creek & Skelly Drive, NBI 15831	None	2 (Past Use)	None
US-75 NB Off-Ramp, Mooser Creek & Skelly Drive,	None	1 (Present	None
NBI 15838		Use), 2 Past	
		Use	
US-75 SB, I-44, NBI 15839*	Unknown	Unknown	Unknown
US-75 NB, I-44, NBI 15840*	Unknown	Unknown	Unknown
US-75 SB, W. 49 th Street, NBI 18268	None	Multiple	None
		Past Use, 2	
		(Present	
		Use)	
US-75 NB, W. 49 th Street, NBI 18267	None	1 (Present	None
		Use), 1	
		(Past Use)	
US-75 SB, W. 46 th Street, NBI 18255	None	1 (Present	None
		Use), 1	
		(Past Use)	
US-75 NB, W. 46 th Street, NBI 18254	None	1 (Present	None
		Use)	
US-75, Cherry Creek, NBI 18005	None	2 (Present	None
, ,		Use)	
I-44 EB, 38 th Street & TSU Railroad, NBI 19479	None	None	None
I-44 WB, 38 th Street & TSU Railroad, NBI 19471	None	None	None
W. 51 st Street, TSU Railroad, NBI 15755	None	None	None
I-44 WB, TSU Railroad, NBI 20294	None	None	None
I-44 EB, TSU Railroad, NBI 12827	None	None	None
1-44 ED, 130 Kaliluau, NDI 12027	TAOHE	TAOHE	MOHE

Identify ALL structures including pipe culverts and	Approx.	Approx.	Approx.
whether positive or negative for migratory birds	Number of	Number of	Number
(identify named streams where possible rather than just	Cliff	Barn	of Eastern
FS#). Provide shapefiles and map of structures	Swallow	Swallow	Phoebe
identifying pos/neg swallow structures.	Nests	Nests	Nests
I-44 EB On-Ramp, TSU Railroad, NBI 15769	None	None	None
Skelly Drive, TSU Railroad, NBI 15763	None	None	None
I-44 WB, Arkansas River, NBI 20580**	Multiple	Multiple	Unknown
	Current and	Present and	
	Past Use	Past Use	
I-44 EB, Arkansas River, NBI 20326**	Multiple	Multiple	Unknown
	Current and	Present and	
DCD CL II D L I I I A CONTOCO OCONTOCOL	Past Use	Past Use	** 1
RCB, Skelly Drive, Lat/Long 36.087206, -96.0073681	Unknown	Unknown	Unknown
RCB, Skelly Drive, Lat/Long 36.087208, -96.0059811	Unknown	Unknown	Unknown
CGMP, R/W Drainage Ditch, Lat/Long 36.086878, -96.0056891	Unknown	Unknown	Unknown
RCB, Skelly Drive, Lat/Long 36.087650, -96.004314	None	None	None
CGMP, Skelly Drive, Lat/Long 36.089324, -95.992420	None	None	None
CGMP, Skelly Drive Pull Off Drive, Lat/Long	None	None	None
36.089384, -95.992868			
RCP, Field Drive, Lat/Long 36.075211, -96.005581	None	None	None
RCP, W. 61 st Street, Lat/Long 36.075304, -96.005431	None	None	None
CGMP, Field Drive, Lat/Long 36.075238, -96.004673	None	None	None
RCP, Field Drive, Lat/Long 36.075396, -96.005300	None	None	None
RCP, US-75, Lat/Long 36.075146, -96.006666	None	None	None
Drop Inlet, R/W Drainage Ditch, Lat/Long 36.075415, -96.008132 ¹	Unknown	Unknown	Unknown
Drop Inlet, S. Santa Fe Avenue, Lat/Long 36.075466, -96.0088491	Unknown	Unknown	Unknown
RCB, I-44, Lat/Long 36.077307, -96.0062351	Unknown	Unknown	Unknown
RCB, US-75 NB On-Ramp, Lat/Long 36.076979,	None	None	None
-96.006290			
RCB, US-75 SB & Off-Ramp, Lat/Long 36.077565,	None	None	None
-96.006847			
RCB, Lat/Long 36.077790, -96.007251	None	None	None
RCP, US-75 SB Off-Ramp, Lat/Long 36.077091,	None	None	None
-96.007029			
RCB, US-75 NB On-Ramp, Lat/Long 36.08495,	Unknown	Unknown	Unknown
-96.005981*			
CGMP, I-44 EB On-Ramp, Lat/Long 36.087966,	None	None	None
-96.004893			
RCB, I-44, Lat/Long 36.088441, -96.0036041	Unknown	Unknown	Unknown
RCP, Business Drive, Lat/Long 36.088082, -96.003738	None	None	None

Identify ALL structures including pipe culverts and whether positive or negative for migratory birds (identify named streams where possible rather than just FS#). Provide shapefiles and map of structures (Barm Swallow Swallow Swallow structures. Nests Nests Nests RCP, I-44 EB Frontage Road, Lat/Long 36.088555, 96.007543* RCP, US-75 SB, Lat/Long 36.088445, -96.007013* Unknown Unknown Unknown Unknown PCB, US-75 SB, Lat/Long 36.088456, -96.006333* Unknown Unknown Unknown Unknown RCB, US-75 SB Off-Ramp, Lat/Long 36.088456, -96.006333* Unknown Unknown Unknown RCB, US-75 SB On-Ramp & Off-Ramps, Lat/Long Unknown Unknown Unknown RCB, US-75 SB On-Ramp & Off-Ramps, Lat/Long Unknown Unknown Unknown Unknown RCB, I-44, Lat/Long 36.088863, -96.006190* Unknown Unknown Unknown Unknown RCB, I-44, Lat/Long 36.088845, -96.007203* Unknown Unknown Unknown Unknown RCB, I-44, Lat/Long 36.088844, -96.007203* Unknown Unknown Unknown Unknown Unknown RCB, I-44, Lat/Long 36.089294, Unknown Unknown Unknown Unknown Unknown RCP, US-75 SB On-Ramp, Lat/Long 36.089294, Unknown Unknown Unknown Unknown Unknown RCP, US-75 SB On-Ramp, Lat/Long 36.092360, -96.007111 None None None None None None None None				
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FS#). Provide shapefiles and map of structures identifying pos/neg swallow structures. Nests Nes				
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RCP, W. 49th Street, Lat/Long 36.092358, -96.006293 None None None Drop Inlet, W. 46th Street, Lat/Long 36.097144, -96.0056011 Unknown Unknown Unknown RCP, Residential Drive, Lat/Long 36.097114, -96.005303 None None None RCP, Residential Drive, Lat/Long 36.097032, -96.004963 None None None CGMP, S. Santa Fe Avenue, Lat/Long 36.097042, -96.008249 None None None RCP, W. 46th Street, Lat/Long 36.097083, -96.008972 None None None RCP, Church Drive, Lat/Long 36.097055, -96.009548 None None None RCP, R/W Drainage Ditch, Lat/Long 36.102653, -96.008953 None None None RCP, R/W Drainage Ditch, Lat/Long 36.102964, -96.003013 Unknown Unknown Unknown -96.0093001 RCP, Skelly Drive, Lat/Long 36.088384, -96.036135 None None None RCP, Residential Drive, Lat/Long 36.089898, -96.030424 None None None RCP, Residential Drive, Lat/Long 36.089443, -96.036135 None None None RCP, Residential Drive, Lat/Long 36.089443, -96.036136 None None<		None	None	None
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	RCP, Residential Drive, Lat/Long 36.089362,	None	None	None
RCP, Residential Drive, Lat/Long 36.089426, None None None				
	RCP, Residential Drive, Lat/Long 36.089426,	None	None	None

Identify <u>ALL</u> structures including pipe culverts and whether positive or negative for migratory birds (identify named streams where possible rather than just FS#). Provide shapefiles and map of structures	Approx. Number of Cliff Swallow	Approx. Number of Barn Swallow	Approx. Number of Eastern Phoebe
identifying pos/neg swallow structures.	Nests	Nests	Nests
-96.027301			
RCP, Residential Drive, Lat/Long 36.089278, -96.027306	None	None	None
RCP, S. 31 st W. Avenue, Lat/Long 36.089181, -96.027345	None	None	None
RCP, Library Parking Lot, Lat/Long 36.089300, -96.017639	None	None	None
RCP, Library Parking Lot, Lat/Long 36.089329, -96.017351	None	None	None
HDPE, R/W Drainage Ditch, Lat/Long 36.089235, -96.017104	None	None	None
RCP, W. 51st Street, Lat/Long 36.089808, -96.014409	None	None	None
CGMP, Parking Lot, Lat/Long 36.089405, -96.010490	None	None	None
RCB, S. Olympia Avenue, Lat/Long 36.089816, -96.002828	None	None	None
RCP, Residential Drive, Lat/Long 36.089771, -96.002736	None	None	None
RCP, S. Maybelle Avenue, Lat/Long 36.089867, -96.002511	None	None	None
RCP, S. Jackson Avenue, Lat/Long 36.089885, -96.000282	None	None	None
RCP, Business Drive, Lat/Long 36.089899, -95.999149	None	None	None
RCP, S. Indian Avenue, Lat/Long 36.090002, - 95.998278	None	None	None
RCB, Business Drive, Lat/Long 36.090342, - 95.997149	None	None	None
RCB, Business Drive, Lat/Long 36.090588, - 95.996419	None	None	None
RCP, Private Car Lot, Lat/Long 36.090765, - 95.9961181	Unknown	Unknown	Unknown
RCP, Skelly Drive, Lat/Long 36.089067, -95.9981762	Unknown	Unknown	Unknown
RCP, I-44 EB Off-Ramp, Lat/Long 36.089126, -95.998760 ²	Unknown	Unknown	Unknown
Drop Inlet, US-75 SB Off-Ramp, Lat/Long 36.090399, -96.007317*	Unknown	Unknown	Unknown
RCP, US-75 SB, Lat/Long 36.090718, -96.006818*	Unknown	Unknown	Unknown
RCP, US-75 NB Off-Ramp, Lat/Long 36.090252, -96.006058*	Unknown	Unknown	Unknown
RCP, US-75 NB Off-Ramp, Lat/Long 36.089246,	Unknown	Unknown	Unknown

Identify <u>ALL</u> structures	Approx.	Approx.		Approx.	
whether positive or nega	whether positive or negative for migratory birds		Number	of	Number
(identify named streams where possible rather than just		Cliff	Barn		of Eastern
FS#). Provide shapefiles	s and map of structures	Swallow	Swallow		Phoebe
identifying pos/neg swallow structures.		Nests	Nests		Nests
-96.005397*					
Other MB and Nests None observed					
Observed					
Based on existing plans, no work on suitable drainage structures will					
occur					
In order to avoid impacts to migratory birds, if structures are being used by these birds, any					

In order to avoid impacts to migratory birds, if structures are being used by these birds, any activities that may destroy active nests, eggs or birds shall be completed between September 1, and February 28, when nests are not occupied. If seasonal avoidance cannot be accomplished, structures shall be protected from new nest establishment prior to March 1, by means that do not result in death or injury to these birds.

6.2 Birds of Conservation Concern

Species Identified on IPaC list	Breeding Season
Eastern Whip-poor-will (Antrostomus	May 1 to August 20
vociferous)	
Harris's Sparrow (Zonotrichia querula)	Breeds elsewhere
Hudsonian Godwit (Limosa haemastica)	April 20 to August 20
Kentucky Warbler (Oporornis formosus)	April 20 to August 20
Lesser Yellowlegs (Tringa flavipes)	Breeds elsewhere
Prothonotary Warbler (Protonotaria citrea)	April 1 to July 31
Red-headed Woodpecker (Melanerpes	May 10 to September 10
erythrocephalus)	
Rusty Blackbird (Euphagus carolinus)	Breeds elsewhere
Semipalmated Sandpiper (Calidris pusilla)	Breeds elsewhere
Wood Thrush (Hylocichla mustelina)	May 10 to August 31

The majority of the bird species rely on open woodlands and forest habitat for breeding and/or foraging. Extensive tree removal for the proposed frontage road south of the I-44/US-75 interchange could affect these species.

In order to avoid impacts to USFWS Birds of Conservation Concern, the removal of trees and shrubs will be restricted to areas within the actual limits of construction, and all aspects of the project (e.g. temporary work areas, alignments) will be modified to avoid tree removal, if possible.

^{*} The structure could not be accessed due to safety concerns (i.e., traffic, narrow shoulders, etc.).

^{**} The structure could not be accessed due to high water levels of the Arkansas River.

¹ The structure could not be accessed and fully inspected.

² The structure was not identified in the field and not fully inspected.

6.3 Interior Least Tern

Sparsely vegetated islands or sandbars along large rivers, with nearby areas of shallow water, occur within the 0.25 miles of the NEPA Environmental Study Footprint.

Field work was conducted on September 30 and October 1, 2020 to delineate the Arkansas River during normal weather conditions. Exposed sandbars that could be potential nesting and loafing habitat were observed. Widening of the Arkansas River bridges (NBIs 20580 and 20326) is planned in Work Package 3. Construction activities within or adjacent to the OHWM of the Arkansas River could impact tern nesting and loafing habitat.

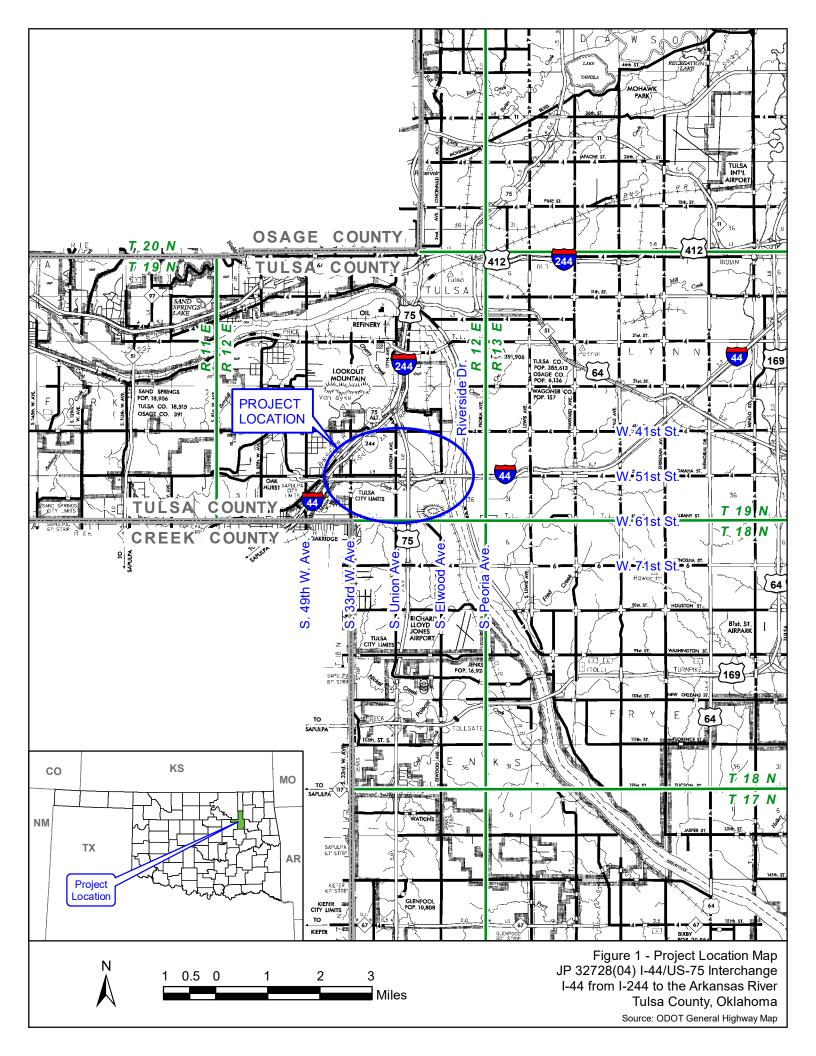
Interior Least Terns are protected under the Migratory Bird Treaty Act. In order to avoid impacts to Interior Least Terns, any activities that may destroy active nests, eggs or birds shall be completed between September 1 and April 30, outside the nesting season. If construction activities will occur during the active nesting season, a 0.25 mile no-work-zone buffer from the Ordinary High Water Mark of the River will be established until the nesting survey can be completed. Any Interior Least Terns nesting in the area must be protected by limiting all work within 0.25 miles of any nesting colonies until after September 1 and be completed by April 30, the following year.

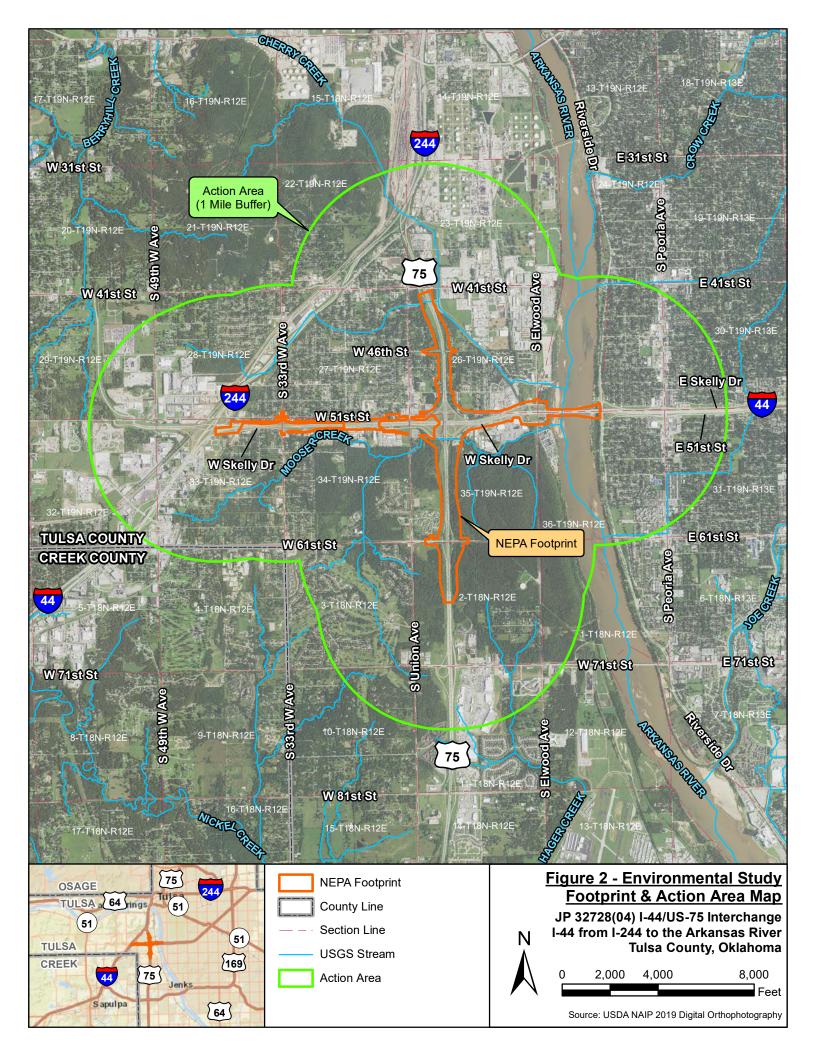
7. REFERENCES:

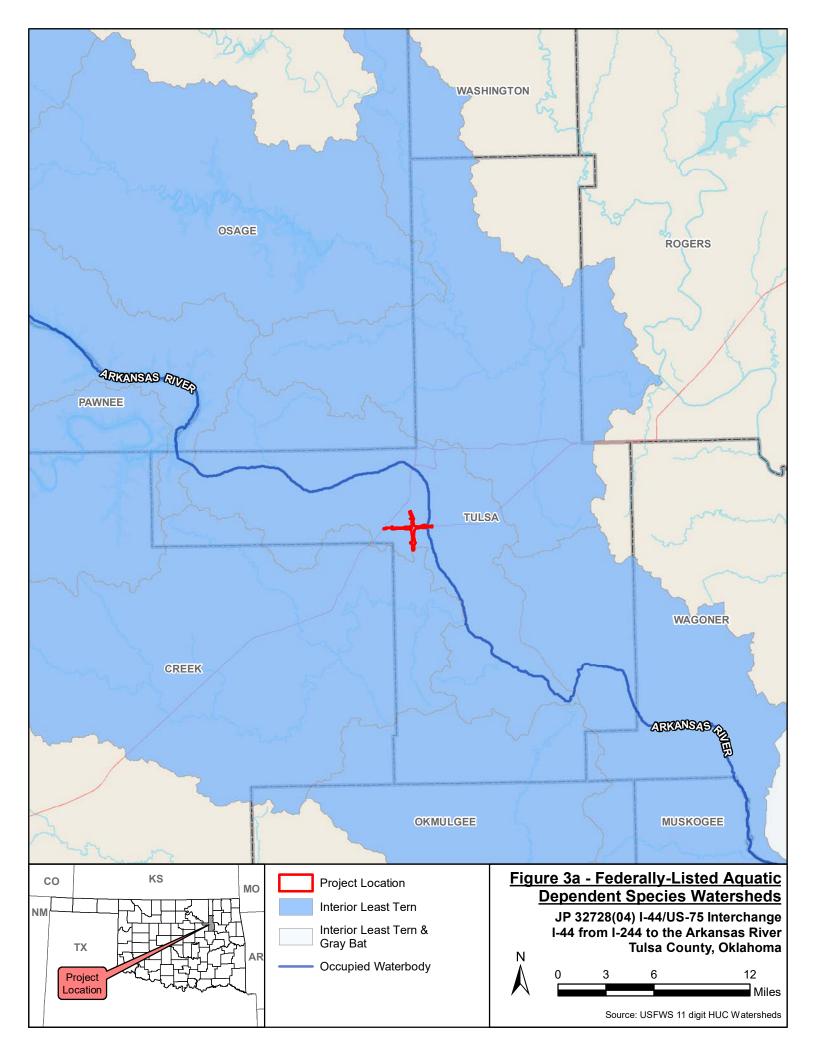
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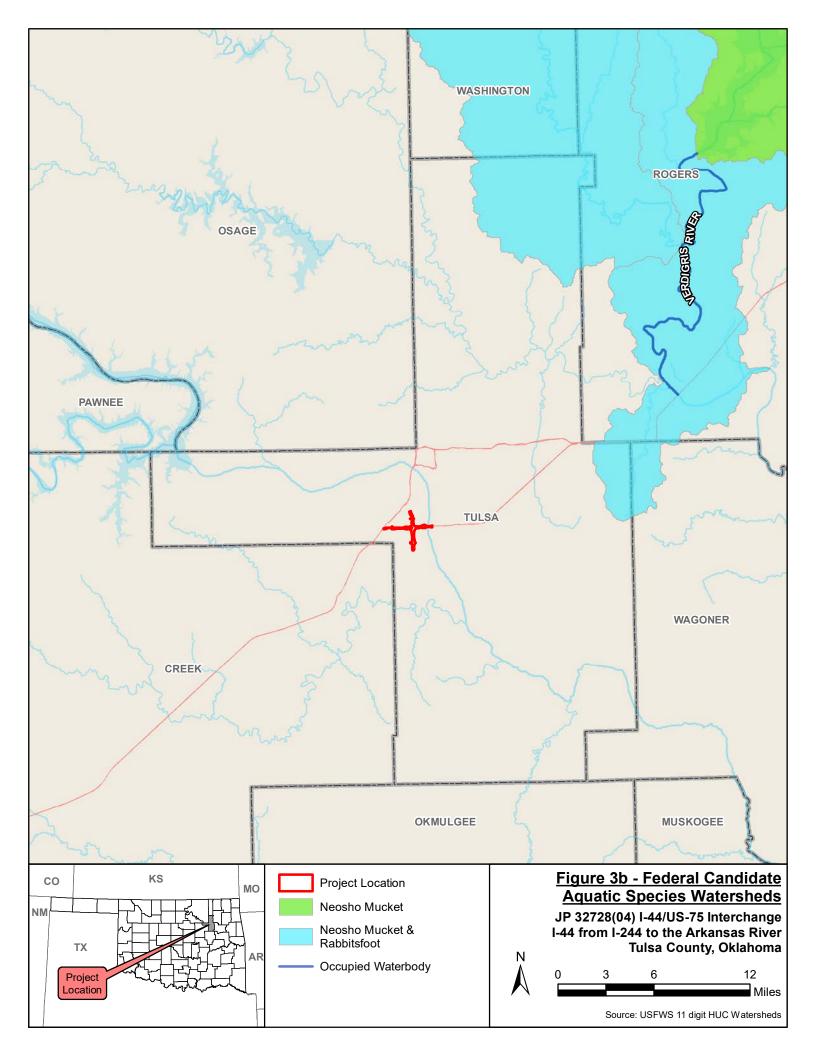
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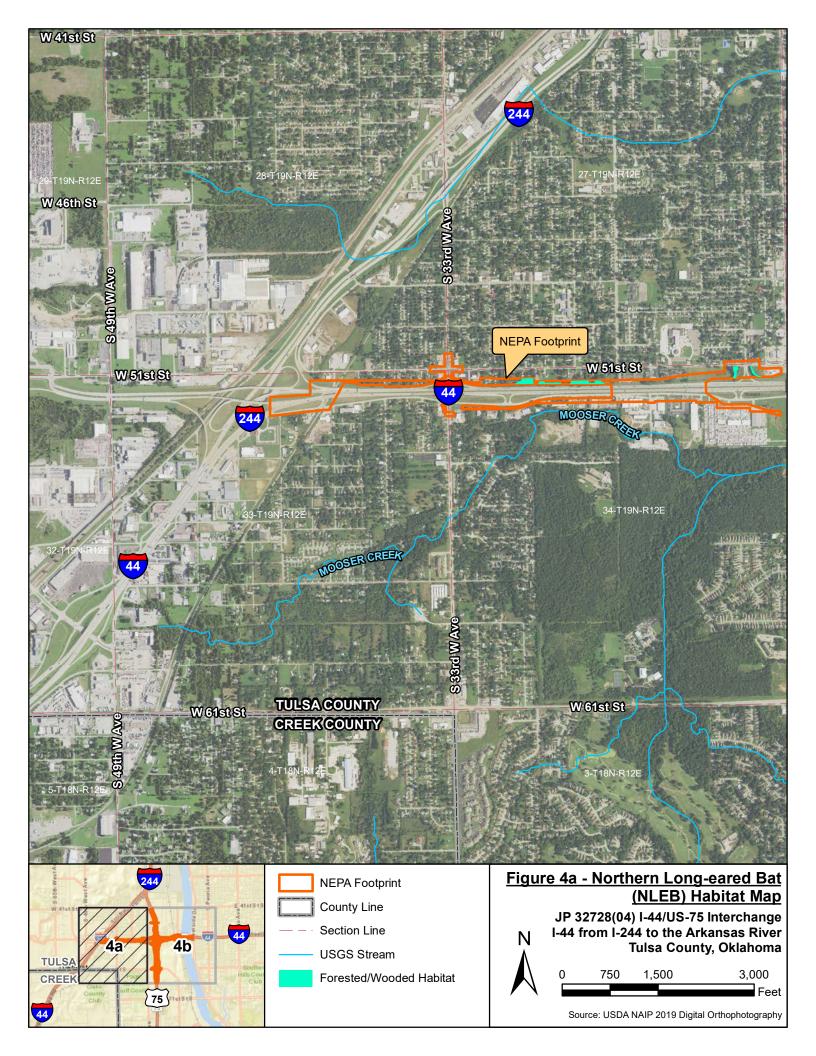
8. FIGURES

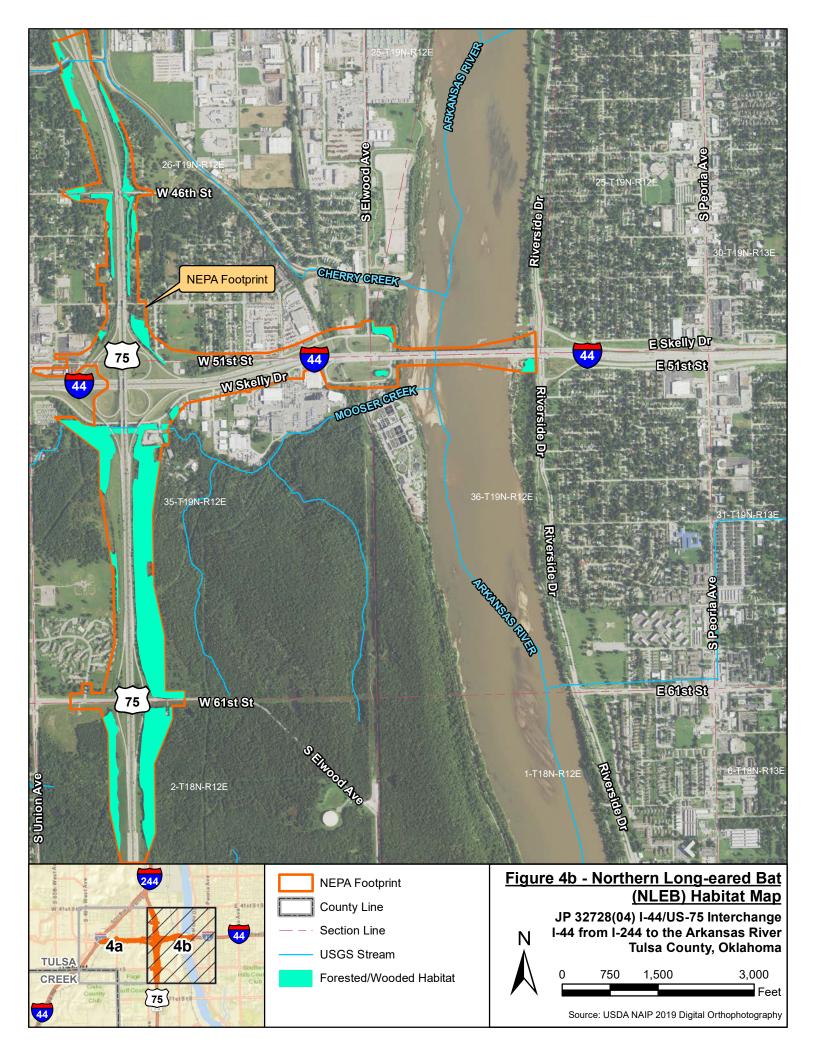


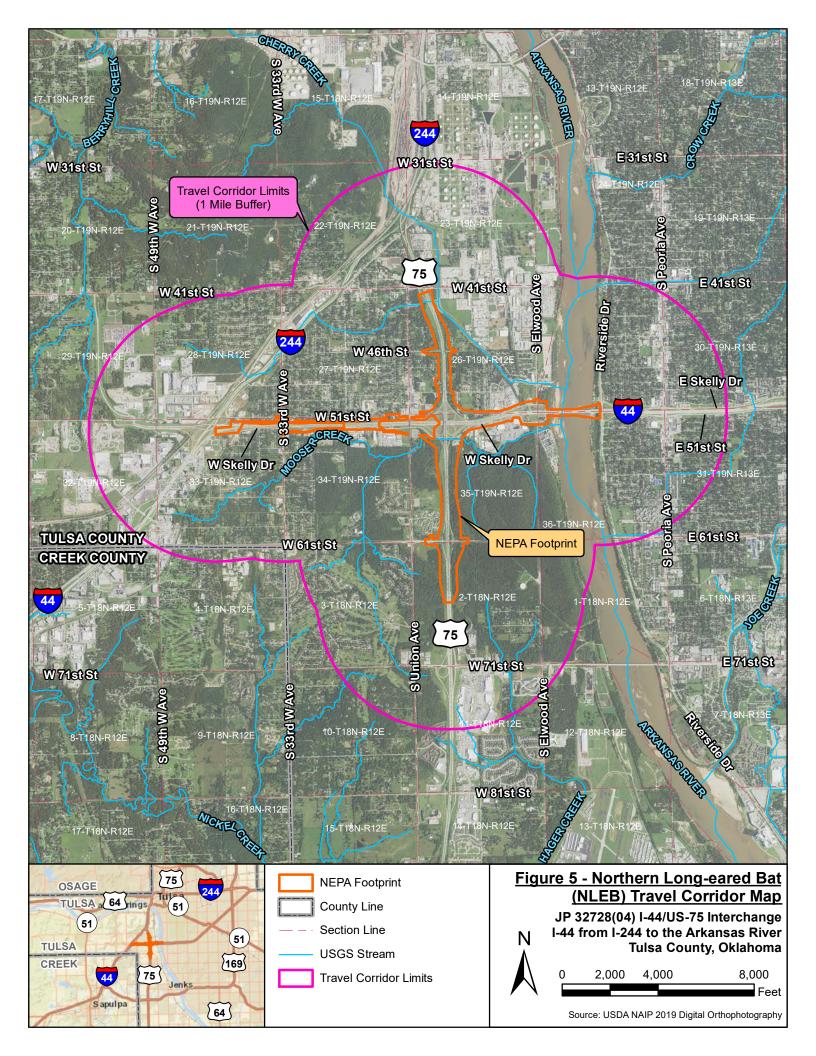


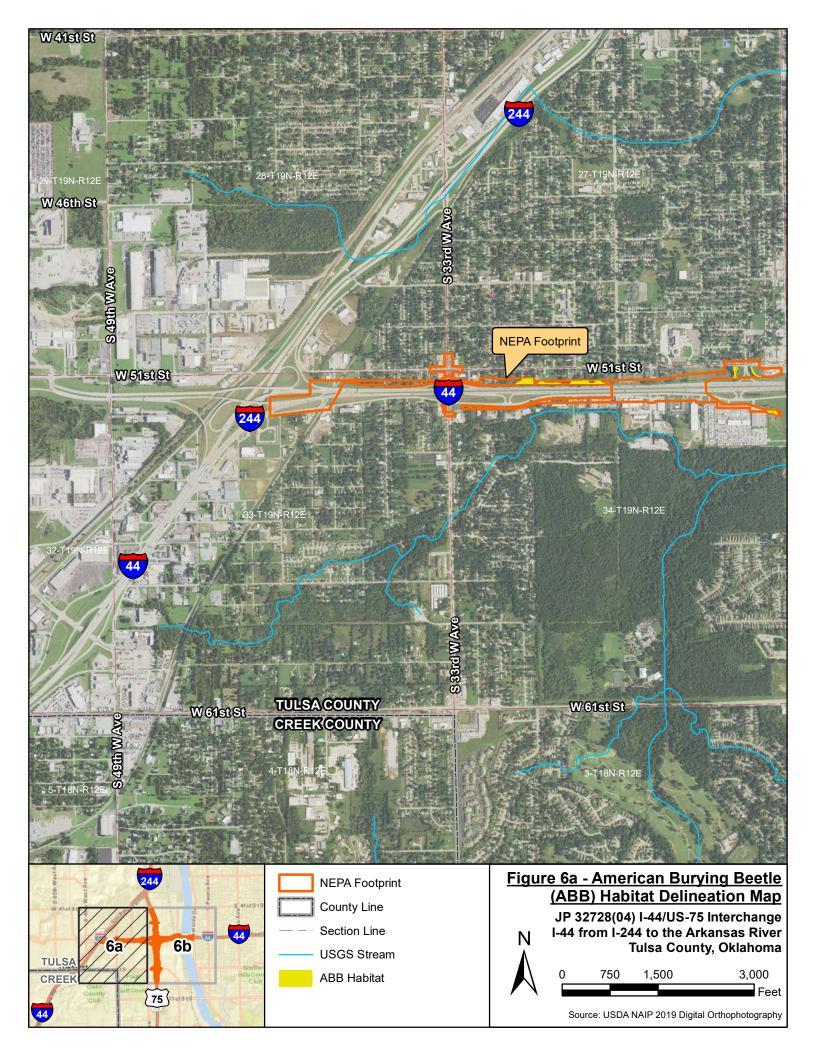


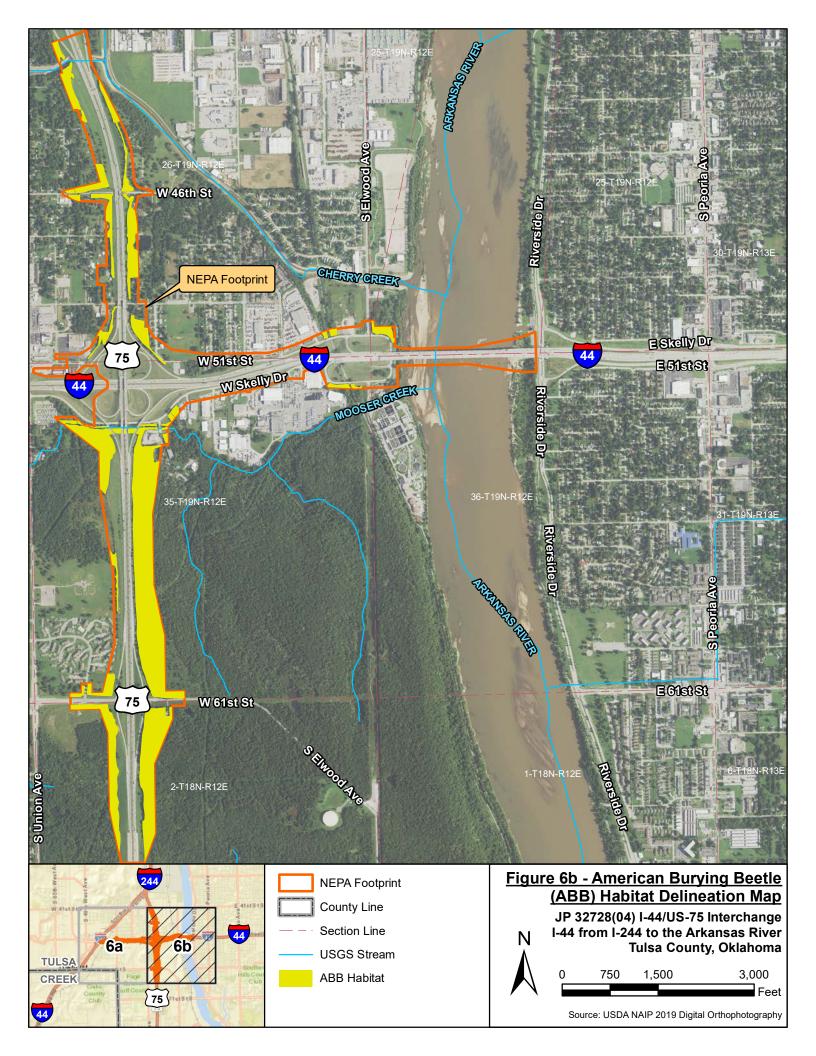






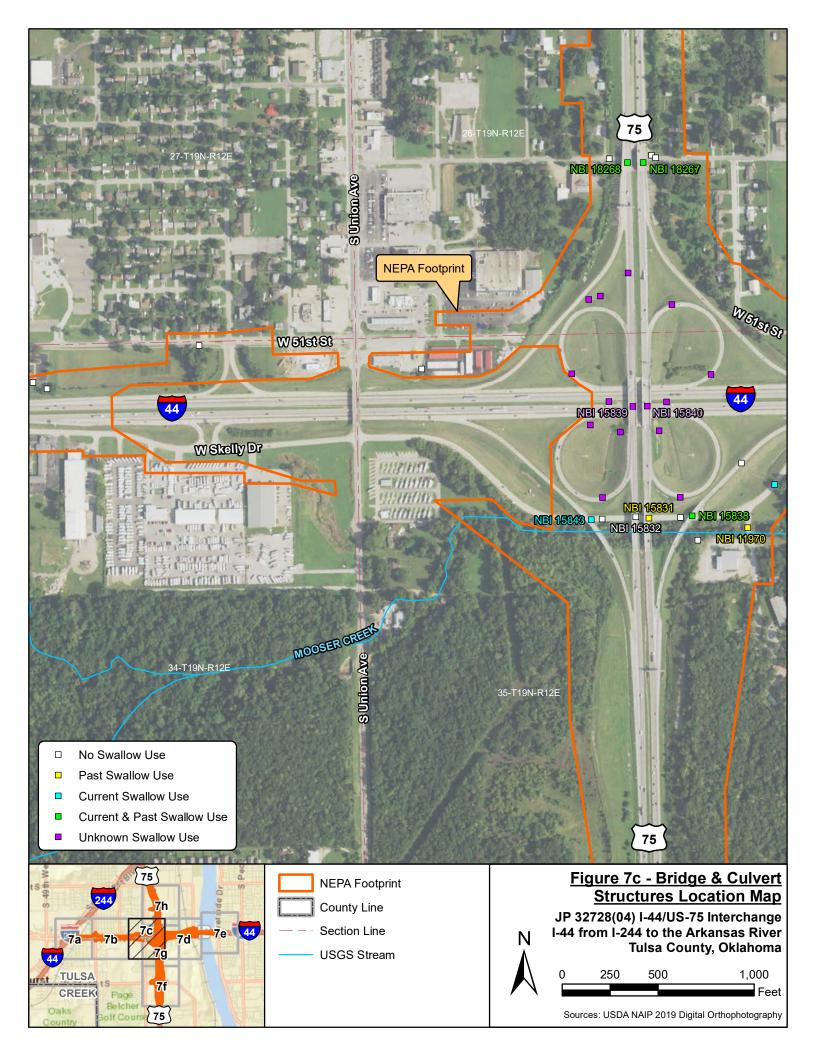


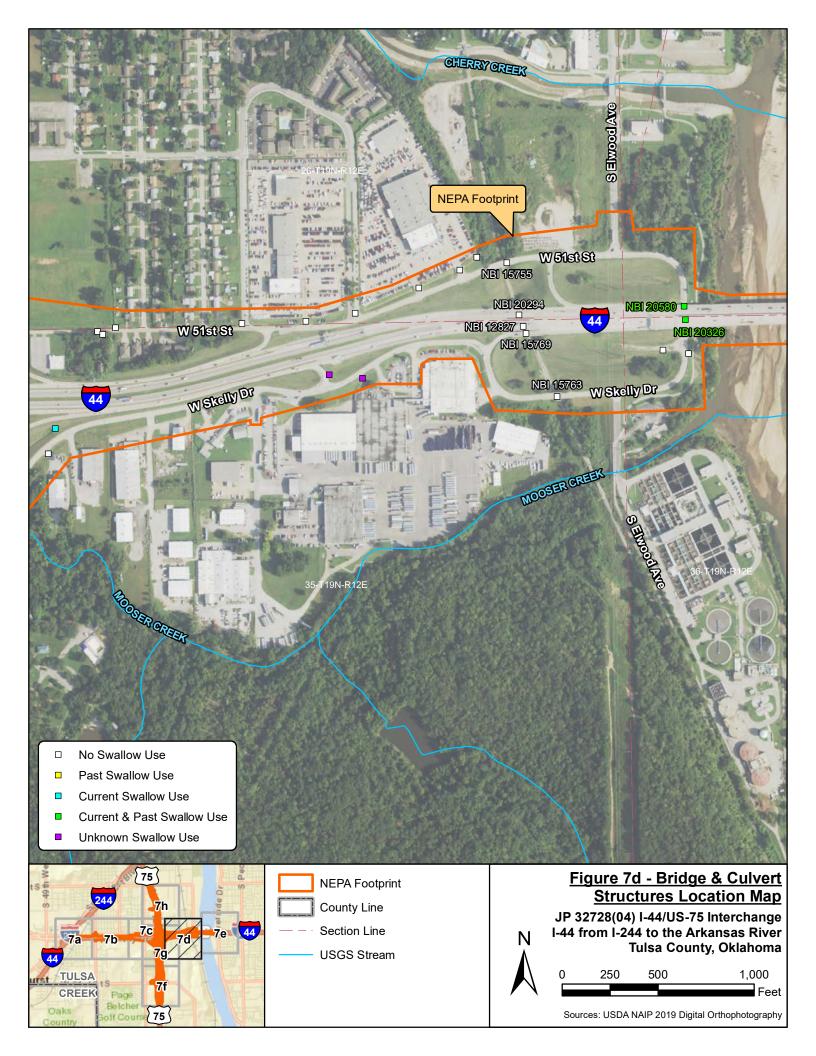


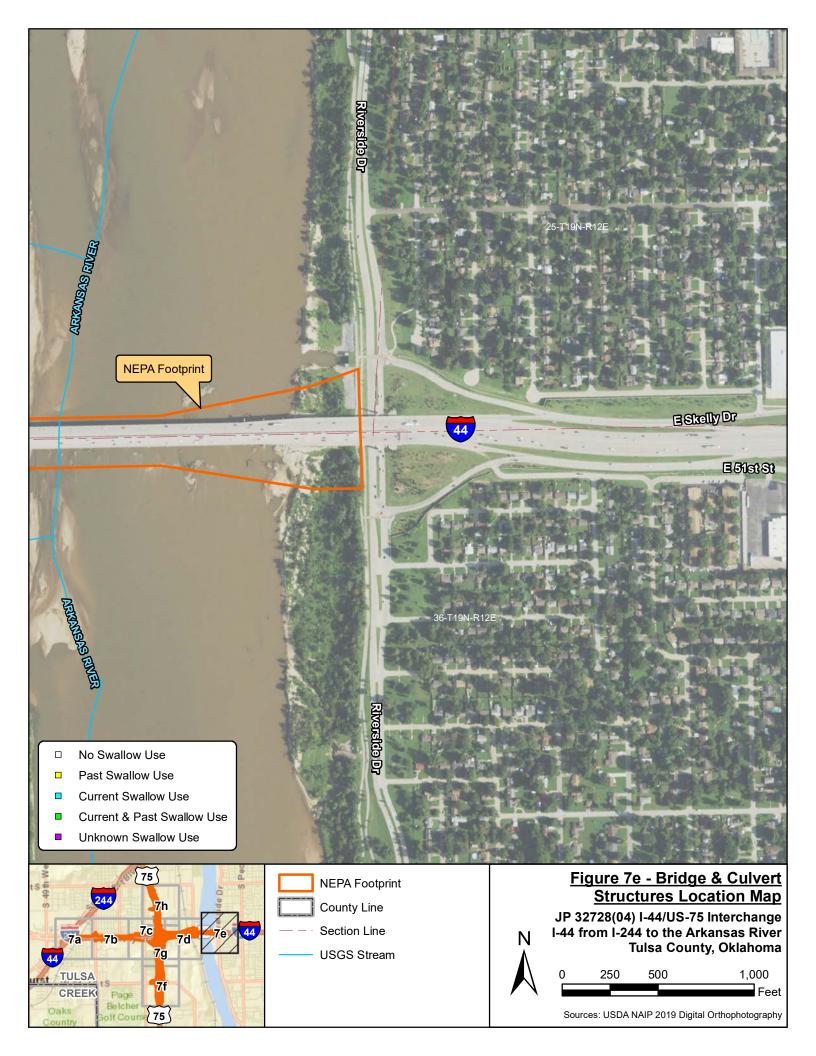


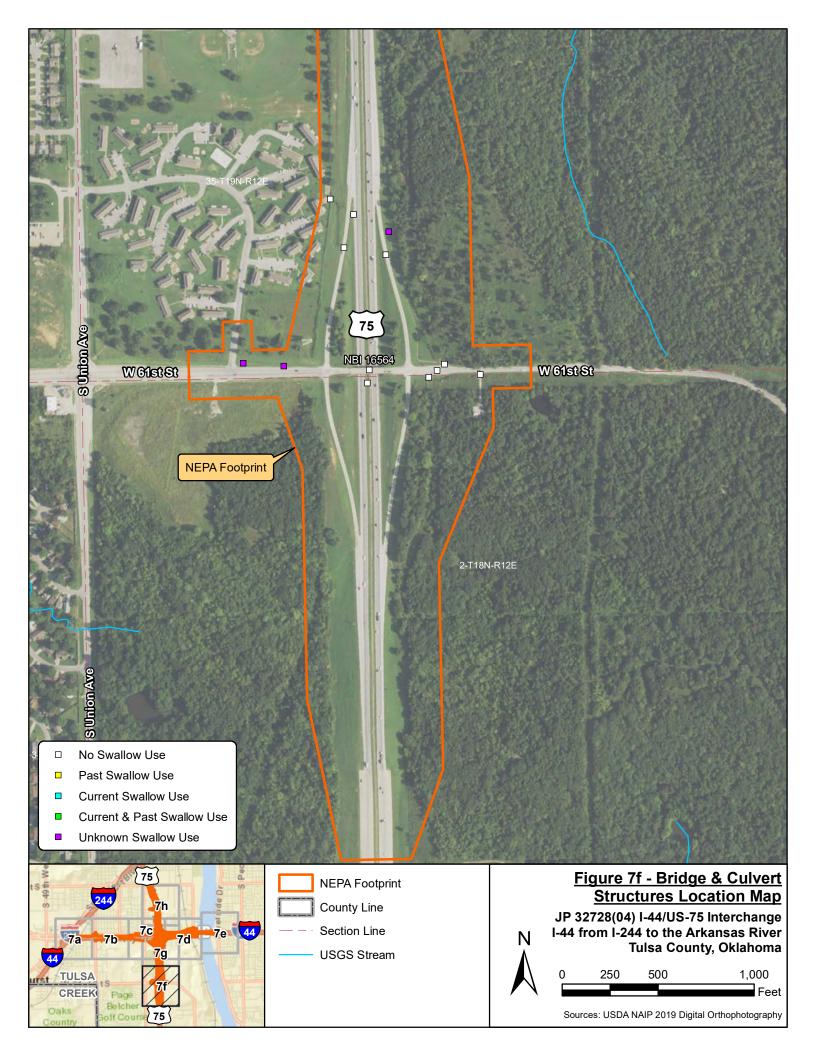


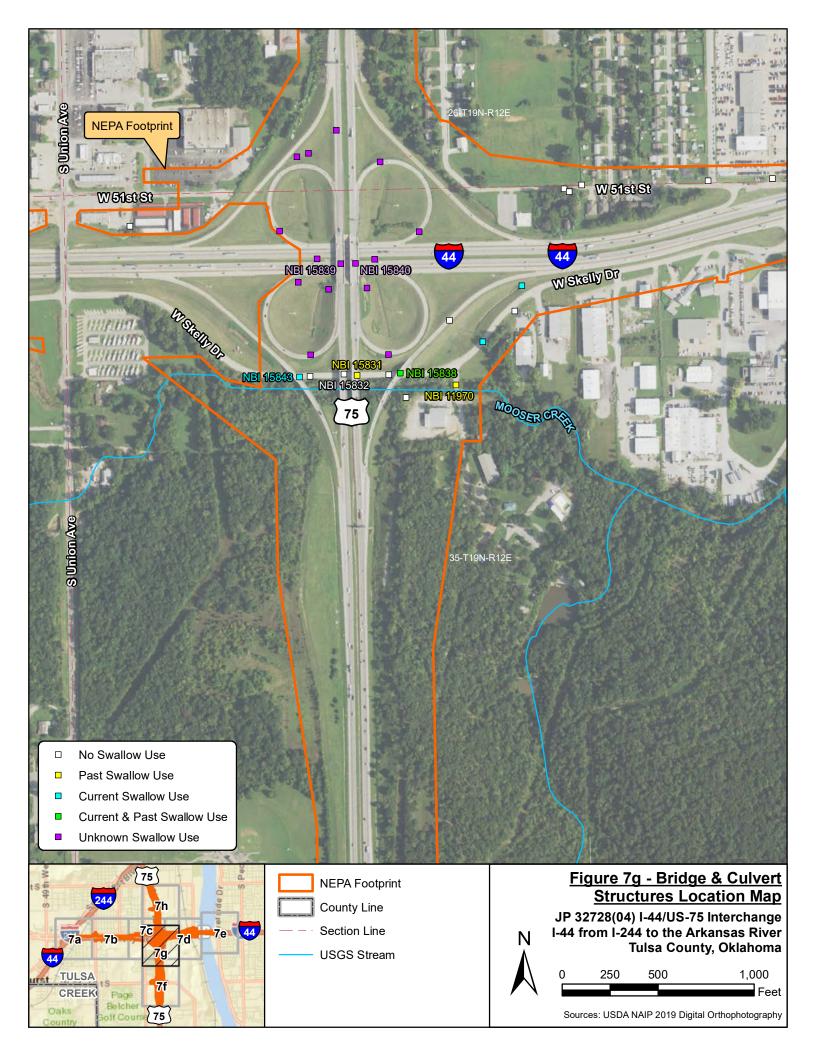


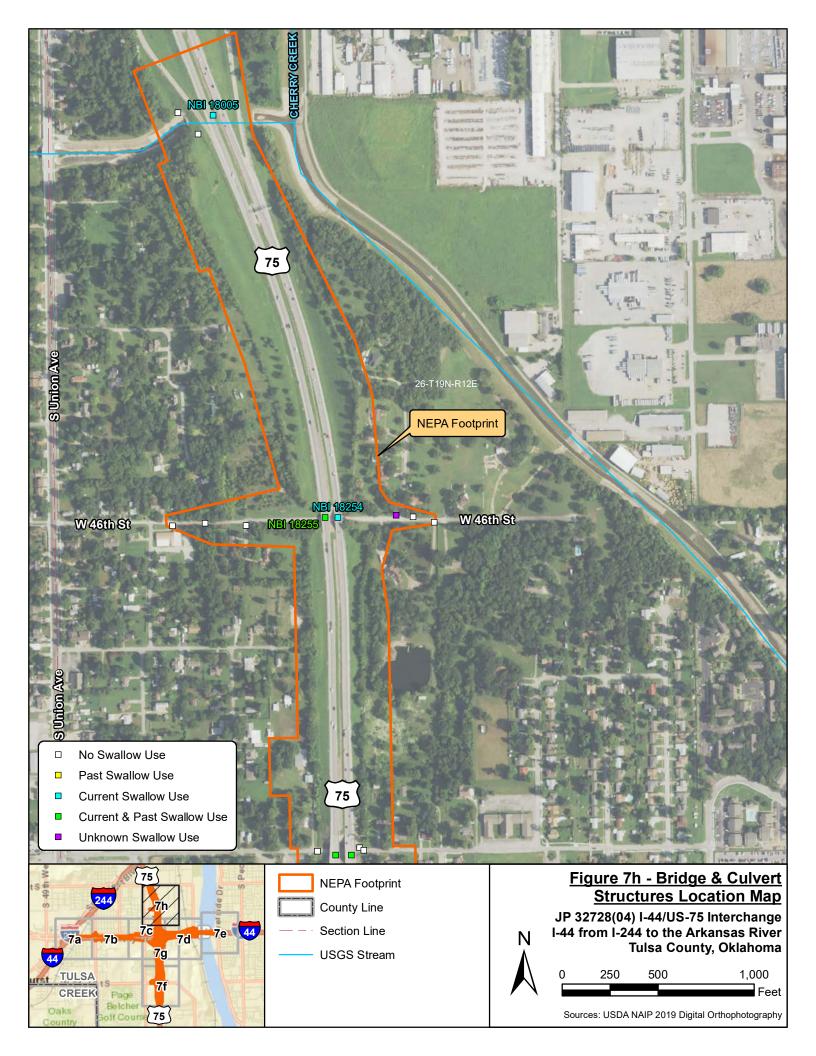


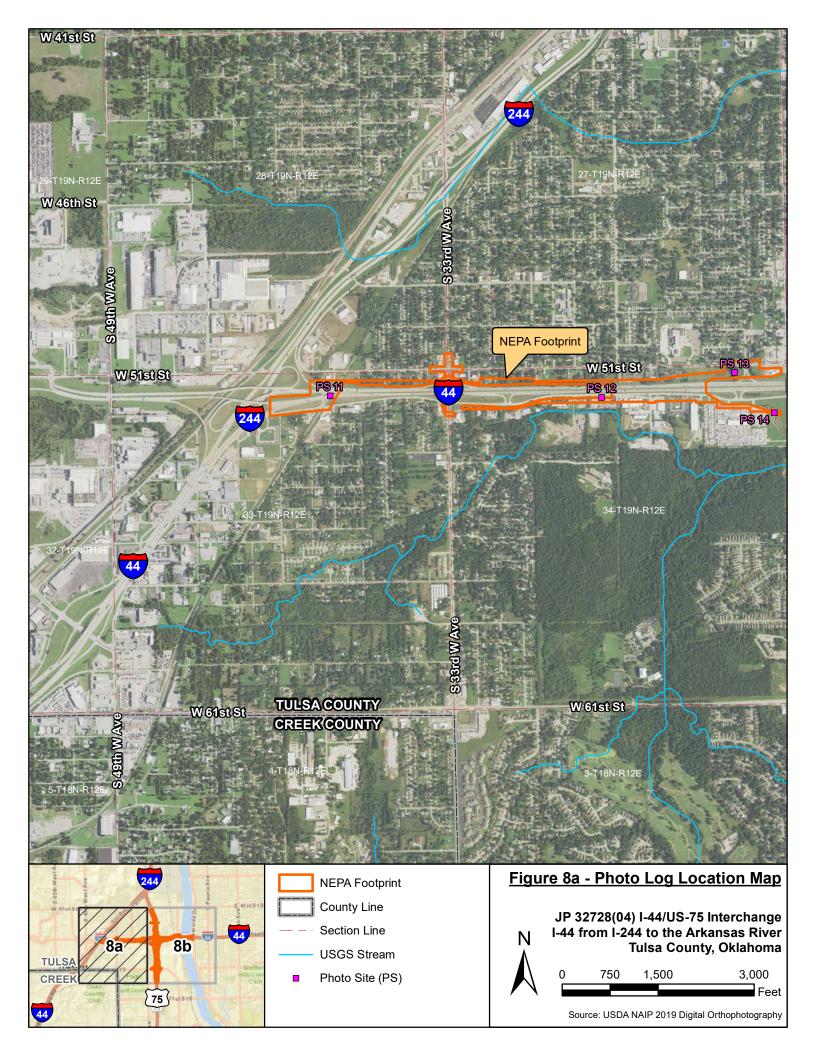


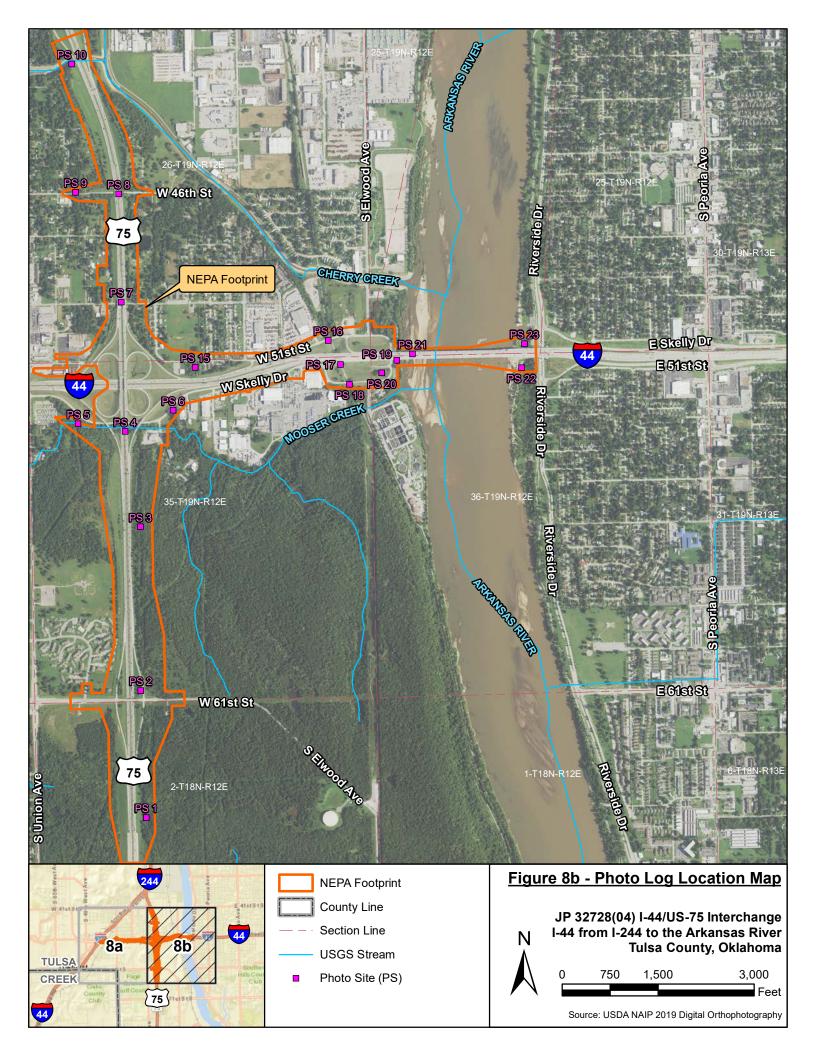














▲(PS 1): View of wooded habitat along US-75. This is suitable ABB and NLEB habitat. View is to the south.



▲ (PS 2): View of US-75 from the W. 61st Street bridge (NBI 16564). View is to the south.



▲ (PS 2): View of NBI 16564. Bridge was not fully inspected due to height and safety. View is to the west.



▲(PS 2): View of wooded habitat along US-75. This is suitable ABB and NLEB habitat. View is to the east.



▲(PS 2): View of W 2, a small PEM wetland in the forested habitat east of US-75. View is to the southeast.



 \blacktriangle (PS 2): View of W 1, a small PEM wetland in the forested habitat east of US-75. View is to the south.



▲(PS 3): View of wooded habitat along US-75. This is suitable ABB and NLEB habitat. View is to the east.



▲(PS 4): View of shallow rocky habitat at Mooser Creek (OW 1). View is upstream to the west.



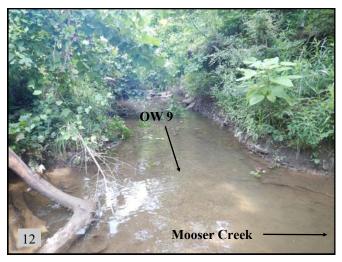
▲(PS 4): View of deep water habitat at Mooser Creek (OW 1). View is downstream to the east.



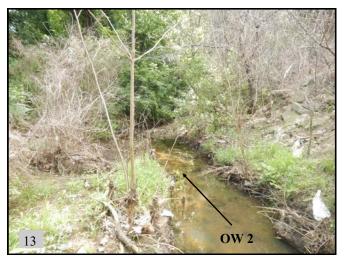
▲ (PS 4): View of Skelly Drive located north of Mooser Creek (OW 1). View is to the west.



▲(PS 4): View of OW 3, a tributary to Mooser Creek (OW 1). View is downstream to the north.



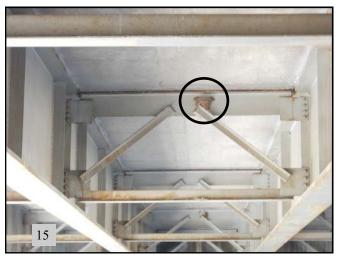
▲(PS 5): View of Mooser Creek (OW 1) and OW 9 confluence. View is to the upstream of OW 9, to the north.



▲ (PS 6): View of OW 2, an ephemeral tributary to Mooser Creek. View is downstream to the south.



▲ (PS 7): View under NBI 18268 over W. 49th St. View is to the south.



▲ (PS 7): View of barn swallow nest (circled) under NBI 18267 over W. 49th St. View is to the south.



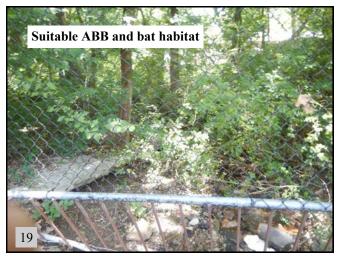
▲(PS 8): View of barn swallow nest (circled) under NBI 18254. View is to the south.



▲ (PS 8): View NBI 18255. View is to the south.



▲(PS 9): View of double culverts under W. 46th Street at OW 4. View is upstream to the south.



▲ (PS 9): View of habitat along US-75 around OW 4, an ephemeral stream. View is downstream to the north.



▲(PS 10): Triple cell RCB over Cherry Creek (OW 5). View is downstream to the east.



▲(PS 7): Concrete lined Cherry Creek (OW 5). View is upstream to the west.



▲(PS 11): Inspecting bridge for bat and/or migratory bird use. View is to the west.



▲(PS 12): Typical view of I-44. View is to the northeast.



▲(PS 13): View of OW 6 (north segment), an ephemeral stream. View is downstream to the south.

On-site photographs taken 5/9/2019 and 6/11/2019 Garver Project No. 16037034



▲(PS 14): View of OW 6 (south segment) with no riparian habitat. View is upstream to the northwest.



▲(PS 15): View of the concrete lined channel and stone banks of OW 7. View is downstream to the south.



▲ (PS 16): View of NBI 15755. Bridge could not be fully inspected due to height. View is to the west.



 \triangle (PS 17): View of NBIs 20294, 12827, and 15769. View is to the southeast.



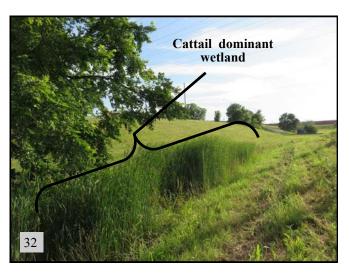
▲ (PS 18): View of NBI 15763. Bridge could not be fully inspected due to height. View is to the southeast.



▲(PS 19): View of the Arkansas River (OW 8) taken in 2019. View is upstream to the northeast.



▲(PS 19): View of the Arkansas River (OW 8) in 2019. View is to the east.



▲ (PS 20): View of W 3, an emergent wetland just west of the Arkansas River. View is to the southwest.



 \blacktriangle (PS 21): View of a PSS wetland (Wetland 4). View is to the north.



 \triangle (PS 21): View of a PEM wetland (Wetland 5). View is to the southeast.



 \blacktriangle (PS 21): View of a PEM wetland (Wetland 6A). View is to the northwest.

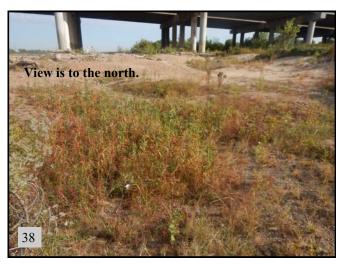


 \blacktriangle (PS 21): View of a PEM wetland (Wetland 6B). View is to the northeast.

Tulsa County, OK J/P No. 32728(04) On-site photographs taken 5/9/2019, 6/11/2019, 9/30/2020 Garver Project No. 16037034



▲ (PS 21): View of the Arkansas River (OW 8) in 2020. View is to the east.



▲ (PS 22): View of Wetland 7A, an emergent wetland on the east floodplain terrace of the Arkansas River.



 \blacktriangle (PS 22): View of a PEM wetland (Wetland 7B). View is to the north.



▲ (PS 22): View of wooded upland habitat along the east terrace of the Arkansas River. View is to the south.



▲(PS 22): View of the Arkansas River in 2020 (OW 8). View is upstream to the northwest.



▲ (PS 23): View of wooded upland habitat along the east terrace of the Arkansas River. View is to the east.

Tulsa County, OK J/P No. 32728(04) On-site photographs taken 9/30/2020 & 10/01/2020

Garver Project No. 16037034



▲ (PS 23): View of open grassland along the east terrace of the Arkansas River. View is to the west.



▲ (PS 23): View of the Arkansas River (OW 8) in 2020. View is downstream to the south.



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Oklahoma Ecological Services Field Office 9014 East 21st Street Tulsa, OK 74129-1428

Phone: (918) 581-7458 Fax: (918) 581-7467 http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: February 11, 2021

Consultation Code: 02EKOK00-2019-SLI-1945

Event Code: 02EKOK00-2021-E-02246

Project Name: I-44 & US-75 Interchange with I-44 Corridor Ultimate Reconstruction

Subject: Updated list of threatened and endangered species that may occur in your proposed

project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan

(http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

Attachment(s):

Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office 9014 East 21st Street Tulsa, OK 74129-1428 (918) 581-7458

Project Summary

Consultation Code: 02EKOK00-2019-SLI-1945 Event Code: 02EKOK00-2021-E-02246

Project Name: I-44 & US-75 Interchange with I-44 Corridor Ultimate Reconstruction

Project Type: TRANSPORTATION

Project Description: The existing US-75 roadway has two 12-foot driving lanes in each

direction (four lanes total) divided with a 30-foot grass median with two four-foot inside shoulders and two 10-foot outside shoulders. The US-75 roadway has an average annual daily traffic (AADT) volume of 76,555 vehicles per day (vpd), with a future projected AADT of 90,429 vpd. The current and future traffic volumes on US-75 require additional driving lanes to provide an adequate and safe level of service (LOS). There are several vertical curves in the corridor that do not meet design standards and do not allow for adequate sight distance for vehicles to reduce speed at critical moments.

The existing I-44 roadway has two 12-foot driving lanes in each direction (four lanes total) divided with a 30-foot grass median with two four-foot inside shoulders and two 10-foot outside shoulders. This portion of I-44 has a high accident rate, the latest 10-year average number being 4 times the statewide average for similar highways. Rear end collisions account for almost half of the accidents, which is indicative of congested conditions. The I-44 roadway has an AADT of 89,922 vpd, with a future projected AADT of 100,660 vpd. In the I-44 corridor the current and future traffic volumes also require addition driving lanes to provide an adequate and safe LOS. There are 19 existing bridges throughout the corridor study area, including the interchange ramps at US-75. The decks, substructures and superstructures of all bridges have relatively low condition ratings, some with deficient horizontal and vertical curves, and six of the bridges are rated either structurally deficient or functionally obsolete. The purpose of the project is to accommodate existing and future growth and traffic demand, decrease congestion, and improve access and mobility.

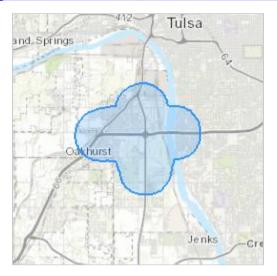
The proposed improvement along US-75 will be reconstructing the mainline beginning at the full width pavement section approximately 3,000 feet north of W. 71st Street, extending north through the I-44 interchange 2.0 miles with four 12-foot-wide concrete driving lanes in each direction (eight lanes total) on the existing alignment, widening to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. Initially, US-75 will be striped for 3 lanes in each direction until such time as the remainder of the corridor is widened to 8 lanes. The US-75 interchange with W. 61st Street will be modified, and a frontage road will be constructed with two 12-foot

driving lanes on the east side of US-75 extending north from W. 61st Street approximately .85-mile intersecting with W. Skelly Drive.

The proposed improvement along I-44 will be to reconstruct the mainline beginning at the junction of I-244, extending east through the US-75 interchange approximately 2.85 miles to just east of the Arkansas River, with three 12-foot-wide concrete driving lanes in each direction (six lanes total) on the existing alignment, widening to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. In addition, 12-foot wide auxiliary lanes will be constructed on each highway to provide exit or entry lanes to and from interchange ramps. W. Skelly Drive will be reconstructed with two 12-foot-wide driving lanes on an offset alignment to the south to accommodate the additional highway width and new ramp configuration. W. 51st Street will be extended east and constructed across US-75 with a new span bridge over, with two 12-foot driving lanes with curb and gutter and will be constructed on a slight offset alignment to the south from Olympia Avenue to Indiana Avenue to better align with intersections.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.08621266199322,-96.01203035251103,14z



Counties: Creek and Tulsa counties, Oklahoma

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an
office of the National Oceanic and Atmospheric Administration within the Department of
Commerce.

Mammals

NAME STATUS

Northern Long-eared Bat Myotis septentrionalis

Threatened

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045

Birds

NAME STATUS

Piping Plover Charadrius melodus

Threatened

Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except

those areas where listed as endangered.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: https://ecos.fws.gov/ecp/species/6039

Red Knot Calidris canutus rufa

Threatened

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864

Insects

NAME

American Burying Beetle *Nicrophorus americanus*

Threatened

Population: Wherever found, except where listed as an experimental population

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/66

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THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BREEDING

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Event Code: 02EKOK00-2021-E-02246

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

- 1. The Migratory Birds Treaty Act of 1918.
- 2. The Bald and Golden Eagle Protection Act of 1940.
- 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the <u>USFWS</u> <u>Birds of Conservation Concern</u> (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ <u>below</u>. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the <u>E-bird data mapping tool</u> (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20

NAME	BREEDING SEASON
Harris's Sparrow <i>Zonotrichia querula</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Hudsonian Godwit <i>Limosa haemastica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

- 1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
- 2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
- 3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

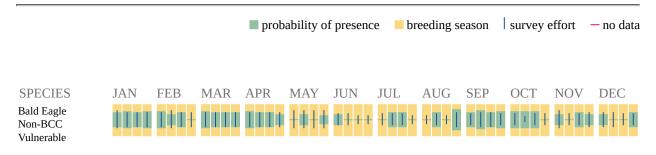
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

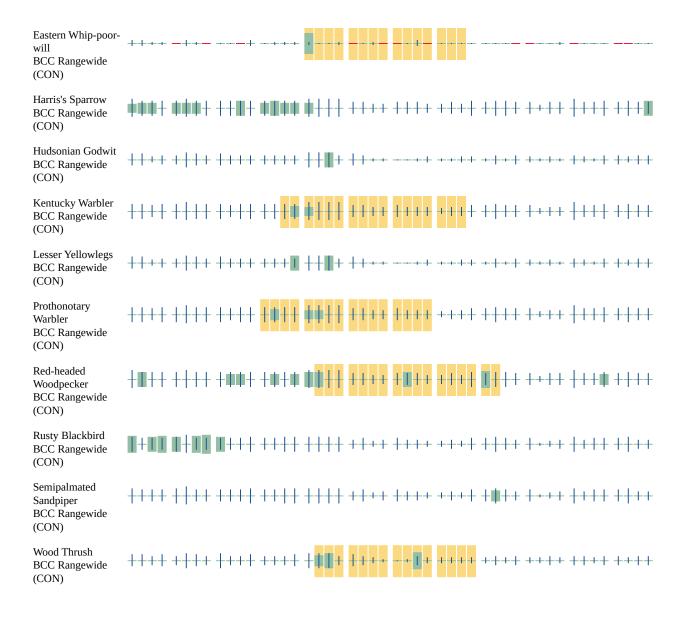
No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/ management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern</u> (<u>BCC</u>) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>AKN Phenology Tool</u>.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

Event Code: 02EKOK00-2021-E-02246

- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- 3. "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam Loring</u>.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- PEM1/SS1C
- PEM1Ah
- PEM1C
- PEM1Ch

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1/SS1A
- <u>PFO1A</u>
- PFO1C
- PSS1A

FRESHWATER POND

- PUBFh
- PUBH
- PUBHh
- PUBHx
- PUSA
- PUSAh
- PUSAx
- PUSC
- PUSCh
- PUSCx

RIVERINE

- R2UBH
- R2UBHx
- R2USC
- R4SBC
- R5UBF

WATERS AND WETLANDS EVALUATION REPORT

For

County	Tulsa	JP Number	33788(08) 33788(09) 33788(10) 33788(11)	Project Number	J3-3788(08) J3-3788(09) J3-3788(10) J3-3788(11)	
Road Number	I-44 & US-75	Water Body Name		Arkansas River, Mooser Creek, Cherry Creek and Tributaries to Mooser Creek		
ROW Date	2022	Let Date	WP2&5: 2027 WP3&4: unkn	Project Length	3 Miles Along I-44 2.5 Miles Along US-75	
Project General Location		I-44 from I-244 to the Arkansas River, including the I-44/US-75 Interchange in Tulsa, OK				
Project Statement		I-44/US-75 Interchange Reconstruction From I-244 Through Arkansas River				

Prepared for:

Oklahoma Department of Transportation Environmental Programs Division 200 NE 21st Street Oklahoma City, OK 73105

Prepared by:

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Address	6450 South Lewis
City, State Zip	Tulsa, OK 74136
Report Date:	July 8, 2019
Revised Report Date:	November 6, 2020

May 9 and June 11, 2019

Additional Field Date: September 30 and October 1, 2020

Initial Field Date:

Form Date: January 24, 2017

PROJECT OVERVIEW

Project Type (Choose one)		
Bridge and Approaches or bridge widening/structure extension		
Grade, Drain, Surface and Bridge	\checkmark	
Grade, Drain and Surface		
Asphalt Overlay Resurfacing		
Widen and Resurface existing lanes		
Pavement Reconstruction or rehabilitation		
Bridge Rehabilitation		
Safety Improvements (Cable Barrier, Guardrail, signage)		
Intersection Modifications		
Safe Routes to School (Describe)		
Enhancements (Describe)		
Other (I-44/US-75 Interchange Modifications)		

Description of the **existing** bridge/roadway

The existing US-75 roadway has two 12-foot driving lanes in each direction (four lanes total) divided with a 30-foot grass median with two four-foot inside shoulders and two 10-foot outside shoulders. The US-75 roadway has an average annual daily traffic (AADT) volume of 76,555 vehicles per day (vpd), with a future projected AADT of 90,429 vpd. The current and future traffic volumes on US-75 require additional driving lanes to provide an adequate and safe level of service (LOS). There are several vertical curves in the corridor that do not meet design standards and do not allow for adequate sight distance for vehicles to reduce speed at critical moments.

The existing I-44 roadway has two 12-foot driving lanes in each direction (four lanes total) divided with a 30-foot grass median with two four-foot inside shoulders and two 10-foot outside shoulders. This portion of I-44 has a high accident rate, the latest 10-year average number being four times the statewide average for similar highways. Rear end collisions account for almost half of the accidents, which is indicative of congested conditions. The I-44 roadway has an AADT of 89,922 vpd, with a future projected AADT of 100,660 vpd. In the I-44 corridor, the current and future traffic volumes also require additional driving lanes to provide an adequate and safe LOS. There are 22 existing bridges throughout the corridor study area, including the interchange ramps at US-75. The decks, substructures, and superstructures of all bridges have relatively low condition ratings, some with deficient horizontal and vertical curves, and five of the bridges are rated either structurally deficient or functionally obsolete.

Description of **proposed** improvements **SPECIFIC TO THIS PROJECT**

The Oklahoma Department of Transportation (ODOT) completed an Environmental Assessment (EA) dated June 17, 2002 for US-75 from SH-67 (151st Street) to I-44 in Tulsa County, a distance of approximately 10 miles. The EA evaluated widening of US-75 from four to six or eight lanes (depending on location) and included the reconstruction of the I-44/US-75 interchange as a fully directional interchange with direct connection, flyover ramps. The current project proposes widening of US-75 from four to six lanes between W. 61st Street and W. 41st Street, widening of I-44 from four to six lanes between I-244 and the Arkansas River, and reconstruction of the I-44/US-75 interchange. Therefore, ODOT is performing additional studies to cover the project extents.

The proposed improvement along US-75 will be reconstructing the mainline beginning at the full width pavement section approximately 3,000 feet north of W. 71st Street, extending north through the I-44 interchange 2.0 miles with four 12-foot-wide concrete driving lanes in each direction (eight lanes total) on the existing alignment. The project will widen US-75 to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. Initially, US-75 will be striped for three lanes in each direction until such time as the remainder of the corridor is widened to eight lanes. The US-75 interchange with W. 61st Street will be reconstructed, and a frontage road will be constructed with two 12-foot driving lanes on the east side of US-75 extending north from W. 61st Street approximately 0.85-mile intersecting with W. Skelly Drive.

The proposed improvement along I-44 will be to reconstruct the mainline beginning at the junction of I-244, extending east through the US-75 interchange approximately 2.85 miles to just east of the Arkansas River, with three 12-foot-wide concrete driving lanes in each direction (six lanes total) on the existing alignment. The project will widen I-44 to the inside with concrete median barrier and 13-foot-wide inside shoulders and 12-foot-wide outside shoulders. In addition, 12-foot wide auxiliary lanes will be constructed on each highway to provide exit or entry lanes to and from interchange ramps. W. Skelly Drive will be reconstructed with two 12-foot-wide driving lanes on an offset alignment to the south to accommodate the additional highway width and new ramp configuration. W. 51st Street will be extended east and constructed over US-75 with a new span bridge that has two 12-foot driving lanes with curb and gutter and will be constructed on a slight offset alignment to the south from Olympia Avenue to Indiana Avenue to better align with intersections.

The project will construct or reconstruct several existing bridges in order to correct structural and/or geometric deficiencies, and to accommodate the widened highways and new interchange. Specific design details will be provided with authorization requests for each work package. The roadways will remain open during construction and traffic will be adjusted utilizing construction phasing and temporary crossovers or pavement widening as needed.

Work Package 1 was let for construction in September 2020. Work Package 2/5 includes improvements to US-75 from approximately 61st Street to 41st Street and includes the majority of the ramp bridges for the I-44/US-75 interchange. Work packages 2 and 5 will be constructed together. Work Package 3 will widen I-44 to eight lanes from approximately 2,650 feet east of

US-75 to the bridge over Arkansas River. The bridges over the Arkansas River are proposed to be widened and a new I-44 Bridge over Tulsa-Sapulpa Union Railroad will be constructed. At the northbound section of US-75 approaching the I-44 interchange, the roadway will widen to six lanes from approximately 2,100 feet south of I-44 to the south end of the bridge over Mooser Creek. The ramp connecting northbound US-75 to eastbound I-44 over Mooser Creek and Skelly Drive will be constructed. In addition, Skelly drive will be extended approximately 400 feet west of US-75 and east to the intersection of the I-44 Access Rd. I-44 access ramps, eastbound on ramp connecting I-44 to Skelly Dr., and westbound off ramp connecting I-44 to 51st St. are needed. The I-44 Access Rd. will be constructed from the intersection of Skelly Dr. to the connection with 51st Street. The US-75 Frontage Road will be constructed from approximately 900 feet north of 61st Street to intersection of Skelly Dr. including Mooser Creek. Regarding structural and non-structural walls, retaining walls are anticipated at the Pepsi Plant South of I-44, retaining walls are expected on the east side of US-75 along Turkey Mountain, US-75 Frontage Road and between the northbound US-75 to eastbound I-44 ramp and Skelly Dr, but no sound walls are anticipated. Work Package 4 will widen I-44 to six lanes from the I-244 junction to just west of Union Ave., reconstruct six service ramps (at 33rd W. Avenue and W. 51st Street) and approximately 0.80 mile of Skelly Drive will be reconstructed with two 12-foot-wide driving lanes on an offset alignment to the south. In addition, partial reconstruction of two system ramps at the west side of the I-44/US-75 interchange is proposed in Work Package 4.

As defined in the EA, the purpose and need of the project is to accommodate existing and future growth and traffic demand, decrease congestion, and improve access and mobility. The EA mentions the geometric design and physical condition of the roadway as contributing to these needs. The same conditions mentioned in the EA of insufficient capacity, substandard vertical and horizontal alignment, and inadequate and functionally obsolete interchanges continue to apply.

Project Environmental Study Footprint

Project Location	n	Environmental Study Footprint		
Section Range	Lat/Long (NAD 83)	<u>Dimensions</u>	Acreage	
<u>& Township</u>				
S25-S28 and S33-S36, T19N, R12E; S2 and S3, T18N, R12E	North end of project (180 feet south of the US-75/W. 41 st St. overpass): 36.103802, -96.009269 South end of project (0.5-mile north of the US-75/W. 71 st St. overpass): 36.068327, -96.006620 East end of project (west of Riverside Drive): 36.089949, -95.984828 West end of project (I-244/I-44 interchange): 36.088449, -96.039041	3.0-mile long segment of I-44¹ on existing roadway alignment from I-244/I-44 interchange extending east to the Arkansas River, with widths varying from 35 feet to 225 feet from the existing pavement and from 245 feet to 555 feet at intersections (excluding the interchange). 2.5-mile long segment of US-75 beginning 3,000 feet north of 71st Street and extending north to approximately 180 feet south of 41st Street with widths varying from 40 feet to 475 feet from the existing pavement and from 165 feet to 805 feet at intersections (excluding the interchange).	350.5	

¹ The west section of the Environmental Study Footprint along I-44 excludes segments included in projects JP 29693(04) and JP 29694(04).

Environmental Study Footprint Soils (NRCS Soil Survey Map)

Map Unit Name	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
8	0 to 1	Well drained		V	Choska-Severn-Urban land complex, rarely flooded
11	3 to 12	Well drained		√	Coweta-Uran land-Eram complex
17	0 to 5	Not listed		1	Urban land-Dennis complex
25	1 to 8	Well drained		V	Kamie-Urban land complex
27	0 to 1	Well drained		1	Kiomatia loamy fine sand, frequently flooded
48	0 to 1	Moderately well drained	V		Radley silt loam, frequently flooded

Map Unit Name	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
54	0 to 1	Somewhat poorly drained	1		Wynona-Urban land complex, occasionally flooded
NBRE	3 to 15	Somewhat poorly drained			Niotaze-Bigheart-Rock outcrop complex, very stony
NBUF	3 to 25	Somewhat poorly drained		1	Niotaze-Bigheart-Urban land complex

Environmental Study Footprint General Description and Vegetation Present

The study area is located south of downtown Tulsa in Tulsa County, Oklahoma. The 2.5-mile long segment of US-75 mainly consists of dense forested tracts and maintained herbaceous right-of-way (ROW) south of the I-44 interchange, and private residential properties and open maintained ROW north of the interchange. The 3.0-mile long segment of I-44 mainly consists of commercial properties, residential yards, and open maintained ROW both west and east of the interchange. The remainder of the study area is occupied by roadway, waterbodies, a few light industrial properties, and tree-lined fencerows. According to the 1956 (photorevised 1967) Sapulpa North, Okla. and the 1952 (photorevised 1967) Jenks, Okla. 7.5 minute United States Geological Survey (USGS) topographic quadrangles, three perennial streams (Arkansas River, Mooser Creek, and Cherry Creek) occur within the study footprint. In addition, seven ephemeral streams, nine wetlands, and one pond were identified during the field visit. Field work was conducted May 9 and June 11, 2019. According to the closest weather station (Brookside, KOKTULSA32) to the study area, the area received 5.94 inches of rainfall within the two weeks prior to the May 9th field investigation with the majority of the precipitation (3.16 inches) occurring April 30, 2019, which was nine days before the start of the May field investigation. The area received 2.88 inches of rainfall within the two weeks prior to the June 11th field investigation with the majority of the precipitation (1.36 inches) occurring May 29th, which was 13 days before the start of the June field investigation. Severe storms brought excess rain to the state of Oklahoma during the last two weeks of May causing major flooding across the state and including the study area. The normal rainfall for Tulsa in the month of May (1981-2010) is 5.82 inches; however, the total rainfall for May 2019 was 13.68 inches (Mesonet 2019). The normal annual total rainfall (1981-2010) for Tulsa is 40.87 inches and as of July 1, 2019, Tulsa has received 37.74 inches of rainfall in only six months. This rainfall, combined with large volumes of water released from the Keystone Dam upstream, resulted in the Arkansas River rising to over 18 feet (major flood stage) in Tulsa. Due to high waters, the Arkansas River and its potential associated features (e.g., ordinary high water mark [OHWM] and wetlands) were submerged during these 2019 floods. Additional field work was conducted on September 30 and October 1, 2020 to delineate areas not accessible in 2019. According to the closest weather station, the area received 1.30 inches of rainfall within the two weeks prior to the September 30th field investigation with the majority of the precipitation (1.14 inches) occurring September 22, 2020, which was eight days before the start of the September field investigation.

Terrestrial community types within the NEPA footprint includes riparian habitat, alluvial terrace (along the Arkansas River), palustrine emergent (PEM) wetland, palustrine scrub-shrub (PSS) wetland, upland wooded habitat, upland herbaceous, and ROW. Vegetation present within the riparian habitat predominately consist of black willow (Salix nigra), common hackberry (Celtis occidentalis), ash-leaf maple (Acer negundo), American elm (Ulmus americana), Shumard's oak (Quercus shumardii), silk tree (Albizia julibrissin), red maple (Acer rubrum), eastern red-cedar (Juniperus virginiana), eastern poison ivy (Toxicodendron flowering dogwood (Cornus florida), horsetail-spike-rush equisetoides), river-bank grape (Vitis riparia), Virginia-creeper (Parthenocissus quinquefolia), horsebrier (Smilax rotundifolia), broad-leaf cat-tail (Typha latifolia), Johnson grass (Sorghum halepense), tall false rye grass (Schedonorus arundinaceus), Japanese honeysuckle (Lonicera japonica), sticky-willy (Galium aparine), and common dandelion (Taraxacum officinale). Vegetation present within the alluvial terrace habitat predominately consist of black willow. eastern cottonwood (Populus deltoides), slippery elm (Ulmus rubra), green ash (Fraxinus pennsylvanica), American elm, ash-leaf maple, red mulberry (Morus rubra), American pokeweed (Phyolacca americana), late-flowering thoroughwort (Eupatorium serotinum), blue mistflower (Conoclinium coelestinum), Johnson grass, spotted lady's-thumb (Persicaria maculosa), bristle grass (Setaria sp.), eastern poison ivy, great ragweed (Ambrosia trifida), crown grass (Paspalum sp.), sedge, (Cyperus sp.), wood-oats (Chasmanthium sp.), Canadian goldenrod (Solidago canadensis), prairie fleabane (Erigeron strigosus), coastal sandbur (Cenchrus spinifex), Bahia grass (Paspalum notatum), golden crownbeard (Verbesina encelioides), heart-leaf peppervine (Ampelopsis cordata), and grape (Vitis sp.). Vegetation present within the PEM and PSS habitats include pecan, common buttonbush (Cephalanthus occidentalis), peatree (Sesbania herbacea), deciduous holly (Ilex decidua), broad-leaf cat-tail, eared redstem (Ammannia auriculata), short-bristle horned beak sedge (Rhynchospora corniculata), swamp smartweed (Persicaria hydropiperoides), creeping primrose-willow (Ludwigia repens), Oklahoma sedge (Carex oklahomensis), black willow, Plowman's-wort (*Pluchea camphorata*), rough cocklebur (*Xanthium strumarium*), late-flowering thoroughwort, nimbleweed (Muhlenbergia schreberi), arrowhead (Sagittaria sp.), rice cut grass (Leersia oryzoides), and an aster (Symphyotrichum sp.). Vegetation present within the upland forest habitat predominately consist of pecan (Carya illinoinensis), blackjack oak (Quercus marilandica), Shumard's oak, redbud (Cercis canadensis), ash-leaf maple, sugar-berry (Celtis laevigata), eastern red-cedar, Chinese privet (Ligustrum sinense), eastern poison ivy, Virginiacreeper, Canada goldenrod, prairie spiderwort (Tradescantia occidentalis), bushy bluestem (Andropogon glomeratus), swamp smartweed, Japanese honeysuckle, Queen Anne's-lace (Daucus carota), sedge (Carex sp.), and southern dewberry (Rubus trivialis). Vegetation present within the upland herbaceous and ROW habitat include Bermuda grass (Cynodon dactylon), Johnson grass, clover (Trifolium sp.), vetch (Vicia asp.), tall false rye grass, and crown grass.

WATERS AND WETLANDS EVALUATION

Data Sources Reviewed (list)

USGS 7.5 minute	NWI Map	USACE Wetland	Additional
Quad		Regional Supplement	Resources Reviewed
1956 (photorevised	1989 Sapulpa North,	Midwest Region	Google Earth
1967) Sapulpa North,	Okla.	_	-
Okla.			NRCS Web Soil
	1980 Jenks, Okla.		Survey
1952 (photorevised			-
1967) Jenks, Okla.			USDA Plant Database

Wetlands and Ponds Summary Table

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Field Sites	Type of Wetland or Pond	Cowardin Classification	Potential Jurisdictional Status	Acres within Environmental Study Footprint
Wetland 1 ¹	Emergent	PEM1G	Not Likely	0.18
Wetland 21	Emergent	PEM1G	Not Likely	0.08
Wetland 31	Emergent	PEM1F	Likely	0.04
Wetland 4	Scrub-Shrub	PSS6Jh	Likely	0.01
Wetland 5	Emergent	PEM1J	Likely	0.01
Wetland 6A	Emergent	PEM1J	Likely	0.57
Wetland 6B	Emergent	PEM1J	Likely	0.02
Wetland 7A	Emergent	PEM1J	Likely	0.03
Wetland 7B	Emergent	PEM1J	Likely	0.02
Pond 1 ¹	Man-made	PUB3Hx	Not Likely	0.11

¹Feature was delineated during the initial field investigation in 2019 when the flood event occurred.

Streams and Drainages Summary Table

Field Sites	Stream Name	USGS Mapped Status	Potential Jurisdictional Status	Acres within Environmental Study Footprint	Linear Feet within Environmental Study Footprint
OW 12	Mooser Creek	Perennial	Likely	0.77	1,630
OW 21, 2	Tributary to Mooser Creek	Ephemeral	Likely	0.01	86
OW 31, 2	Tributary to Mooser Creek	Ephemeral	Likely	0.001	7
OW 41· 2	Tributary to Cherry Creek	Ephemeral	Likely	0.01	73
OW 51	Cherry Creek	Perennial	Likely	0.38	505
OW 61- 2	Tributary to Mooser Creek	Ephemeral	Likely	0.03	258
OW 71, 2	Tributary to Mooser Creek	Ephemeral	Likely	0.03	271
OW 8	Arkansas River	Perennial	Likely	7.13	388
OW 91- 2	Tributary to Mooser Creek	Ephemeral	Likely	0.02	142

¹ Feature was delineated during the initial field investigation in 2019 when the flood event occurred.

Streams and other linear aquatic features

OW 1 – Mooser Creek, a USGS-mapped perennial stream was observed as perennial during the field investigation. An estimated total of 1,630 linear feet (0.77 acre) of OW 1 occurs within the study footprint where it flows west to east through the study area and is a direct tributary to the Arkansas River. The stream velocity was high due to recent rain and flood events that recently occurred at the study area (see section *Environmental Study Footprint General Description and Vegetation Present*). The OHWM of OW 1 was observed between five to 30 feet wide with an estimated depth of 10 inches to two feet. The majority of OW 1's streambanks were gradually sloping with a good root system, and the streambank erosion potential is low. Within the study area, a wooded riparian zone of approximately 30 to 55 feet in width is present along the north bank of Mooser Creek. A wooded riparian zone of approximately 80 to > 100 feet in width is present along the south bank. The stream substrate was primarily clay and cobble and the water was clear amber in color. During the field investigation, a riffle, run, roots/root wads, undercut banks, rock ledges, algae on rocks and drift material were observed. Aquatic organisms observed

² Stream is not a USGS-mapped feature; therefore, the status was determined during the field investigation.

include frogs, tadpoles, fish and crayfish. Dominant riparian plant species observed include black willow, ash-leaf maple, silk tree, American elm, green ask, American sycamore (*Platanus occidentalis*), deciduous holly, eastern poison ivy, horsebrier, river-bank grape, Virginia-creeper, trumpet-creeper (*Campsis radicans*) and peppervine. This feature is likely subject to regulation by the USACE as it is a USGS-mapped perennial stream and a direct tributary to the Arkansas River.

OW 2 – An unnamed tributary to Mooser Creek, was observed as ephemeral during the field investigation. An estimated total of 86 linear feet (0.01 acre) of OW 2 occurs within the study footprint where it flows north to south in the study area and is a direct tributary to Mooser Creek. The OHWM of OW 2 was observed between four to 10 feet wide with an estimated depth of 0.5 inch to 12 inches. The streambanks were gradually sloping and well vegetated (primarily by trees), and the streambank erosion potential is low. Within the study area, a wooded riparian zone of approximately 70 feet in width is present along the west bank of OW 2. A wooded riparian zone of approximately 65 to > 100 feet in width is present along the east bank. The stream substrate was primarily clay and the water was clear dark brown in color. During the field investigation, a run, roots/root wads, undercut banks, rock ledges and drift material were observed. Aquatic organisms observed were frogs. Dominant riparian plant species observed include black willow, Shumard's oak, Virginia wild rye (*Elymus virginicus*), Johnson grass, eastern poison ivy, horsebrier and peppervine. This feature is likely subject to regulation by the USACE due to its offsite hydrologic connection to Mooser Creek, a USGS-mapped perennial stream.

OW 3 – An unnamed tributary to Mooser Creek, was observed as ephemeral during the field investigation. The majority of OW 3 is a concrete lined ditch paralleling the southbound lanes of US-75 and assumed to drain upland habitat. The substrate of OW 3 transitions to large concrete riprap, boulders, and rock as it continues to flow downhill and approach the forested riparian habitat of Mooser Creek. A small section of OW 3 is considered within the jurisdictional limits (i.e., from the confluence of Mooser Creek to the point at which the feature begins to go up hill) where it resides within the elevation of the ordinary high water mark of Mooser Creek. An estimated total of 7 linear feet (0.001 acre) of OW 3 occurs within the study footprint where it flows south to north in the study area and is a direct tributary to Mooser Creek. The OHWM of OW 3 was observed as five feet wide with an estimated depth of one inch. The streambanks were gradually sloping and well vegetated, and the streambank erosion potential is low. Within the study area, a wooded riparian zone of > 100 feet in width is present along both banks. The stream substrate was primarily cobble and the water was clear tan in color. During the field investigation, a run, roots/root wads, rock ledges and drift material were observed. There were no aquatic organisms observed. Dominant riparian plant species observed include black willow, Shumard's oak, ash-leaf maple, redbud, Virginia wild rye and eastern poison ivy. This feature is likely subject to regulation by the USACE due to its hydrologic connection to Mooser Creek, a USGS-mapped perennial stream.

OW 4 – An unnamed tributary to Cherry Creek, was observed as ephemeral during the field investigation. An estimated total of 73 linear feet (0.01 acre) of OW 4 occurs within the study footprint where it flows south to north in the study area. OW 4 crosses W. 46th Street; however, the feature only exhibits OHWM characteristics on the north side of W. 46th Street and the south side is completely blocked by household furniture and debris. The OHWM of OW 4 was observed between two to four feet wide with an estimated depth of four to 10 inches. The streambanks were

short and well vegetated (primarily by trees), and the streambank erosion potential is low. Within the study area, a wooded riparian zone of > 100 feet in width is present along both banks. The stream substrate was primarily silt and the water was clear brown in color. During the field investigation, rock ledges, algae on rocks and drift material were observed. No aquatic organisms were observed. Dominant riparian plant species observed include Shumard's oak, common hackberry, American elm, deciduous holly, eastern poison ivy, river-bank grape, and Virginia-creeper. This feature is likely subject to regulation by the USACE due to its hydrologic connection to Cherry Creek, a USGS-mapped perennial stream.

OW 5 – Cherry Creek, a USGS-mapped perennial stream was observed as perennial during the field investigation. The channel and banks for this feature are completely concrete lined within the study area. An estimated total of 505 linear feet (0.38 acre) of OW 5 occurs within the study footprint where it flows west to east in the study area and is a direct tributary to the Arkansas River. The OHWM of OW 5 was observed as 30 feet wide with an estimated depth of four to six inches. The stream banks are concrete so there is no streambank erosion potential. Within the study area, an herbaceous ROW and a > 100-foot-wide wooded upland zone is present at ground level on both sides of Cherry Creek. The water within the channel was clear copper in color and no aquatic organisms were observed. During the field investigation, algae on rocks was observed. This feature is likely subject to regulation by the USACE as it is a USGS-mapped perennial stream and a direct tributary to the Arkansas River. However, due to the extensive existing modifications (i.e., concrete lined) this feature should not require compensatory mitigation.

OW 6 -An unnamed tributary to Mooser Creek, was observed as ephemeral during the field investigation. This feature begins north of I-44, flows south under I-44 and Skelly Drive and under Union Avenue where it then flows directly into Mooser Creek outside of the study area. Due to the shape of the study area, there are two segments of OW 6 (one north of I-44 and one south of I-44). An estimated total of 258 linear feet (0.03 acre) of OW 6 occurs within the study footprint. The OHWM of the north segment of OW 6 was observed to be five feet wide with an estimated depth of six to 12 inches. The OHWM of the south segment of OW 6 was observed between 4 to 7 feet wide with an estimated depth of six inches to 12 inches. The north segments streambanks were gradually sloping with a good root system and well vegetated (predominately by trees), and the streambank erosion potential is low. The streambanks at the south segment were steep with a good root system, and the streambank erosion potential is moderate. A narrow wooded riparian zone of approximately 10 feet in width is present along both banks of the north segment. A wooded riparian zone was absent on both banks of the south segment. The stream substrate was primarily clay and the water was clear amber brown in color. During the field investigation, roots/root wads, undercut banks, algae and drift material were observed at both segments of OW 6. No aquatic organisms were observed. Dominant riparian plant species observed along the north segment include black willow, silk tree, eastern red-cedar, eastern poison ivv, flowering dogwood, horsetail-spike-rush, river-bank grape and Virginia-creeper. Dominant riparian plant species observed along the south segment include red maple, broad-leaf cat-tail, Johnson grass, tall false rye grass, eastern poison ivy, Japanese honeysuckle, sticky-willy, and common dandelion. This feature is likely subject to regulation by the USACE due to its hydrologic connection with Mooser Creek, a USGS-mapped perennial stream.

OW 7 – An unnamed tributary to Mooser Creek, was observed as ephemeral during the field investigation and located north of I-44. An estimated total of 271 linear feet (0.03 acre) of OW 7 occurs within the study footprint where it flows north to south in the study area (potentially into OW 2, located south of I-44). The OHWM of OW 7 was observed between two to 5.5 feet wide with an estimated depth of four to 10 inches. The majority of OW 7 has a concrete/gravel channel bottom with stone lined banks that eliminates erosion potential. Within the study area and adjacent to W. 51st Street, a small wooded riparian zone of approximately 30 feet in width is present along both banks. The riparian area transitions into a more narrow zone with scattered tress, scrub-shrub and vines further downstream. The water was clear dark brown in color. During the field investigation, a riffle and rock ledges were observed. No aquatic organisms were observed. Dominant riparian plant species observed include American elm, common hackberry, eastern poison ivy, Virginia-creeper, river-bank grape, fringed greenbrier, Bermuda grass and Johnson grass. This feature is likely subject to regulation by the USACE due to its hydrologic connection with Mooser Creek, a USGS-mapped perennial stream.

OW 8 – Arkansas River, a USGS-mapped perennial stream was observed as perennial during the field investigation. The stream velocity was moderate and had a general north to south flow. An estimated total of 388 linear feet (7.13 acres) of the Arkansas River occurs within the study footprint. The OHWM of the Arkansas River is between 850 to 1,020 feet wide with an estimated depth between two feet and eight feet. The river has been over channelized, increasing the width of the alluvial terrace. The streambanks were sandy with limited vegetation (primarily trees and scrub-shrub), and the streambank erosion potential is moderate. The primary stream substrate is sand, and the water was clear amber in color. During the field investigation, a riffle, pools, wetlands, runs, undercut banks, roots/root wads, and drift material were observed. Aquatic organisms observed includes mussels, frogs, turtles, and crayfish. This feature is likely subject to regulation by the USACE as it is a USGS-mapped perennial stream.

OW 9 – An unnamed tributary to Mooser Creek, was observed as an ephemeral stream during the field investigation. OW 9 is located east of Union Avenue and south of Skelly Drive and flows southeast within the study boundary directly into Mooser Creek. An estimated total of 142 linear feet (0.02 acre) of OW 9 occurs within the study footprint. The OHWM of OW 9 was observed as four feet with a depth between 10 to 18 inches. The majority of the streambanks were steep and partially vegetated with grasses, shrubs, and trees, therefore, the streambank erosion potential is low. A narrow wooded riparian zone of approximately 10 feet in width is present along west bank and approximately 75 feet on the east bank of OW 9. The stream substrate was primarily clay and the water was clear brown in color. During the field investigation, undercut banks, roots/root wads and drift material were observed. No aquatic organisms were observed during the field investigation. Dominant riparian plant species observed include black willow, box elder, American elm, Cherokee sedge (*Carex cherokeensis*), and eastern poison ivy. This feature is likely subject to regulation by the USACE due to its hydrologic connection to Mooser Creek, a USGS-mapped perennial stream.

Wetlands and ponds

Wetland 1 – This wetland is not illustrated on the 1989 Sapulpa North, Okla. NWI map, but would be classified as a PEM1G (Palustrine, Emergent, Persistent, Intermittently Exposed Wetland). Wetland 1 is located in the forested habitat northeast of the US-75/W. 61st Street overpass and near the south end of the study area. The study area was saturated due to recent rain and flood events that recently occurred at the study area (see section *Environmental Study Footprint General Description and Vegetation Present*). Wetland 1 was observed as an emergent wetland with surface water, high water table, saturated soils, water-stained leaves, geomorphic position, the FAC-neutral test, and hydric soils with a redox dark surface indicator. Vegetation observed includes pecan, nimbleweed, Oklahoma sedge, swamp smartweed, creeping primrose-willow, fringed greenbrier (*Smilax bona-nox*), an aster, and an arrowhead. Approximately 0.18 acre occurs within the footprint. This feature is not likely subject to regulation by the USACE due to it being isolated and has no hydrologic connection to any surrounding aquatic features besides Wetland 2.

Wetland 2 – This wetland is not illustrated on the 1989 Sapulpa North, Okla. NWI map but would be classified as a PEM1G (Palustrine, Emergent, Persistent, Intermittently Exposed Wetland) and is located directly north of Wetland 1. The area was very saturated due to recent rain events that occurred at the study area (see section *Environmental Study Footprint General Description and Vegetation Present*). Wetland 2 was observed as an emergent wetland with surface water, high water table, saturated soils, geomorphic position, the FAC-neutral test, and hydric soils with a depleted dark surface indicator. Vegetation observed includes rice cut grass, perennial rye grass (*Lolium perenne*), fringed greenbrier, and a sedge. Approximately 0.08 acre occurs within the footprint. This feature is not likely subject to regulation by the USACE due to it being isolated and has no hydrologic connection to any surrounding aquatic features besides Wetland 1.

Wetland 3 – This wetland is not illustrated on the 1980 Jenks, Okla. NWI map but would be classified as a PEM1F (Palustrine, Emergent, Persistent, Semipermanently Flooded Wetland) and is located near the west bank of the Arkansas River within the south section of the I-44 Access Road loop. The area was very saturated due to recent rain events that occurred at the study area (see section *Environmental Study Footprint General Description and Vegetation Present*). Water from Wetland 3 drains into the Arkansas River (OW 8). Wetland 3 was observed as an emergent wetland with surface water, saturated soils, algal mats, geomorphic position, the FAC-neutral test, and hydric soils with a redox depression indicator. Vegetation observed includes broad-leaf cattail, swamp smartweed and Oklahoma sedge. Approximately 0.04 acre occurs within the footprint. This feature is likely subject to regulation by the USACE due to its hydrologic connection to the Arkansas River, a USGS-mapped perennial stream.

Wetland 4 – This wetland is not illustrated on the 1980 Jenks, Okla. NWI map but would be classified as a PSS6Jh (Palustrine, Scrub-Shrub, Deciduous, Intermittently Flooded, Diked/Impounded Wetland) and is located within the alluvial terrace on the west bank of the Arkansas River. Wetland 4 was observed as a scrub-shrub wetland with geomorphic position, the FAC-neutral test, and assumed hydric soils based on the regional supplement (see Data Forms). Vegetation observed includes black willow, Plowman's-wort, swamp smartweed, rough cocklebur, late-flowering thoroughwort, and Johnson grass. Approximately 0.01 acre occurs within the footprint. This feature is likely subject to regulation by the USACE due to its hydrologic

connection to the Arkansas River, a USGS-mapped perennial stream.

Wetland 5 – This wetland is not illustrated on the 1980 Jenks, Okla. NWI map but would be classified as a PEM1J (Palustrine, Emergent, Persistent, Intermittently Flooded Wetland) and is located within the alluvial terrace on the west bank of the Arkansas River. Wetland 5 was observed as an emergent wetland with saturated soils, algal mats, geomorphic position, the FAC-neutral test, and hydric soils based on the regional supplement (see Data Forms). Vegetation observed includes swamp smartweed, Plowman's-wort, eared redstem, short-bristle horned beak sedge, and broadleaf cat-tail. Approximately 0.01 acre occurs within the footprint. This feature is likely subject to regulation by the USACE due to its hydrologic connection to the Arkansas River, a USGS-mapped perennial stream.

Wetland 6A – This wetland is not illustrated on the 1980 Jenks, Okla. NWI map but would be classified as a PEM1J (Palustrine, Emergent, Persistent, Intermittently Flooded Wetland) and is located within the alluvial terrace on the west bank of the Arkansas River. Wetland 6A was observed as an emergent wetland with saturated soils, geomorphic position, the FAC-neutral test, and hydric soils based on the regional supplement (see Data Forms). Vegetation observed includes common buttonbush, peatree, eared redstem, swamp smartweed, short-bristle horned beak sedge, Plowman's-wort, and an aster. Approximately 0.57 acre occurs within the footprint. This feature is likely subject to regulation by the USACE due to its hydrologic connection to the Arkansas River, a USGS-mapped perennial stream.

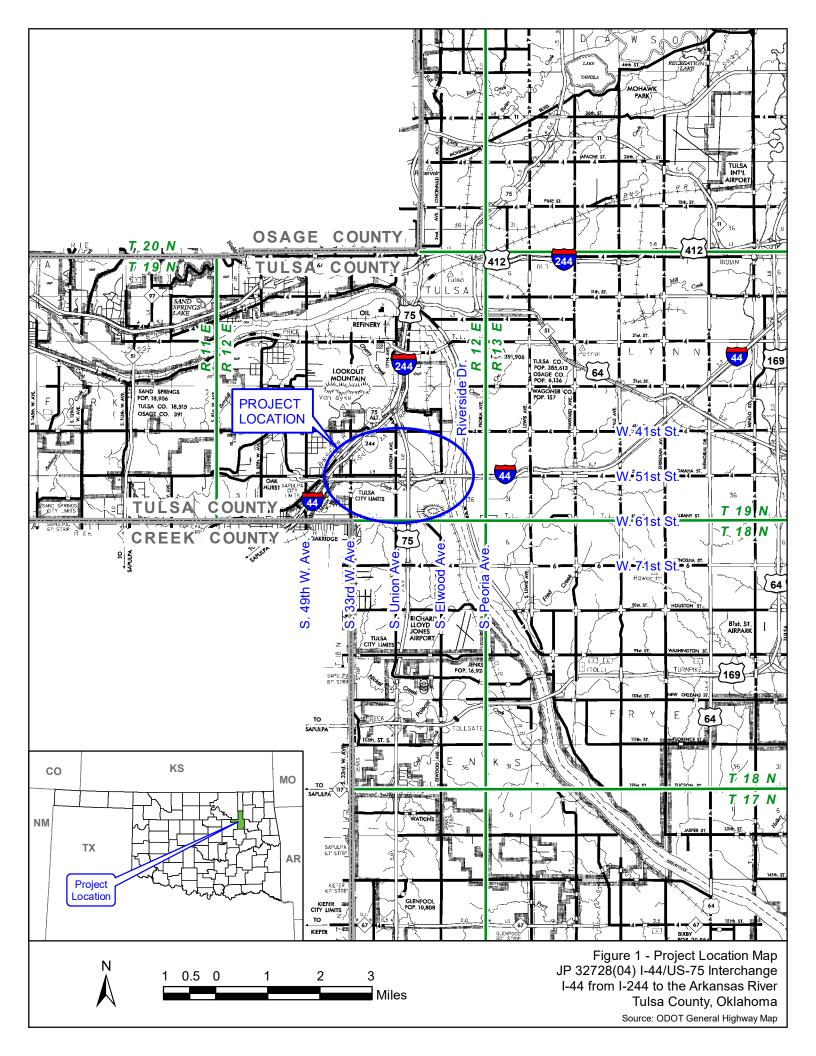
Wetland 6B – This wetland is not illustrated on the 1980 Jenks, Okla. NWI map but would be classified as a PEM1J (Palustrine, Emergent, Persistent, Intermittently Flooded Wetland) and is located within the alluvial terrace on the west bank of the Arkansas River. Wetland 6B was observed as an emergent wetland with saturated soils, geomorphic position, the FAC-neutral test, and hydric soils based on the regional supplement (see Data Forms). Vegetation observed includes peatree, eared redstem, swamp smartweed, short-bristle horned beak sedge, Plowman's-wort, and an aster. Approximately 0.02 acre occurs within the footprint. This feature is likely subject to regulation by the USACE due to its hydrologic connection to the Arkansas River, a USGS-mapped perennial stream.

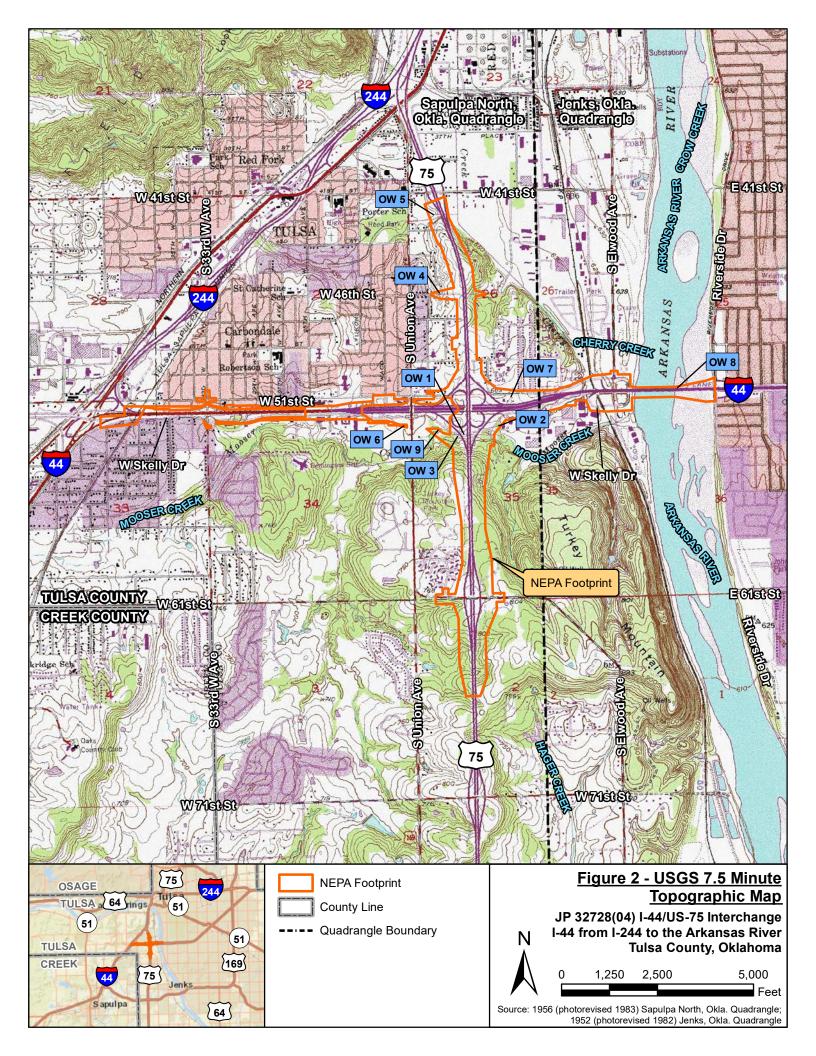
Wetland 7A – This wetland is not illustrated on the 1980 Jenks, Okla. NWI map but would be classified as a PEM1J (Palustrine, Emergent, Persistent, Intermittently Flooded Wetland) and is located within the alluvial terrace on the east bank of the Arkansas River. Wetland 7A was observed as an emergent wetland with geomorphic position, the FAC-neutral test, stunted vegetation, and hydric soils based on the regional supplement (see Data Forms). Vegetation observed includes swamp smartweed, short-bristle horned beak sedge, eared redstem, and Plowman's-wort. Approximately 0.03 acre occurs within the footprint. This feature is likely subject to regulation by the USACE due to its hydrologic connection to the Arkansas River, a USGS-mapped perennial stream.

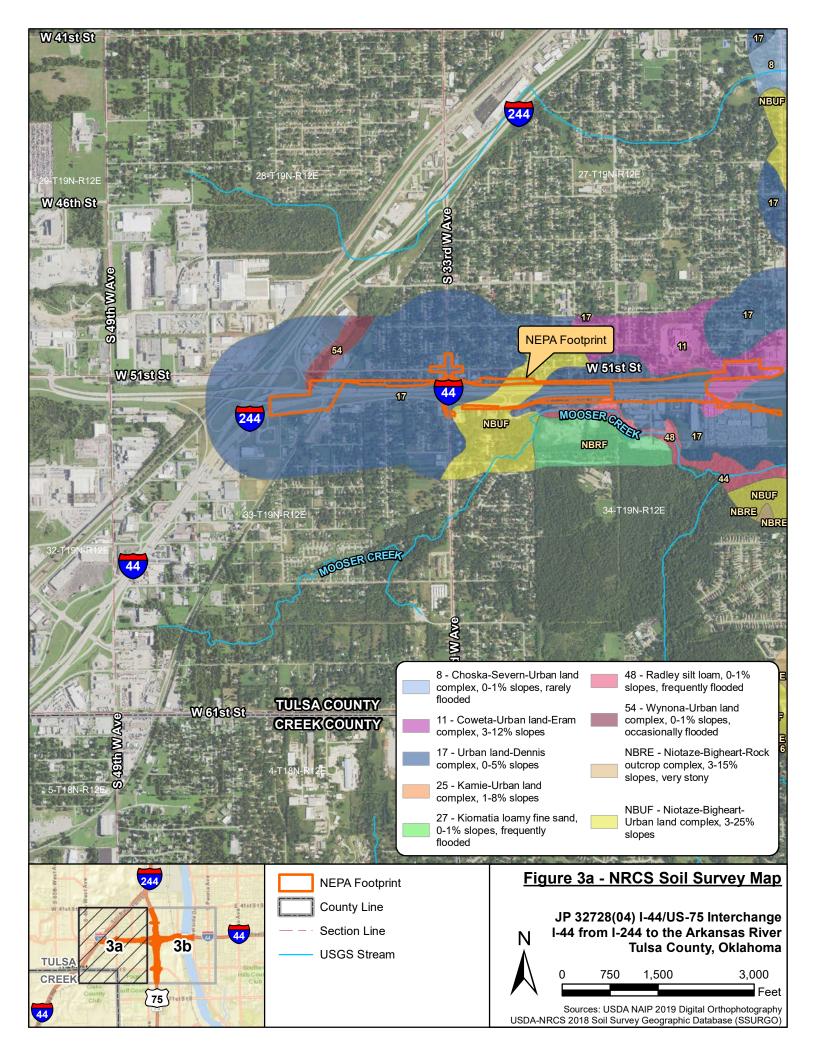
Wetland 7B – This wetland is not illustrated on the 1980 Jenks, Okla. NWI map but would be classified as a PEM1J (Palustrine, Emergent, Persistent, Intermittently Flooded Wetland) and is located within the alluvial terrace on the east bank of the Arkansas River. Wetland 7B was observed as an emergent wetland with geomorphic position, stunted vegetation, the FAC-neutral

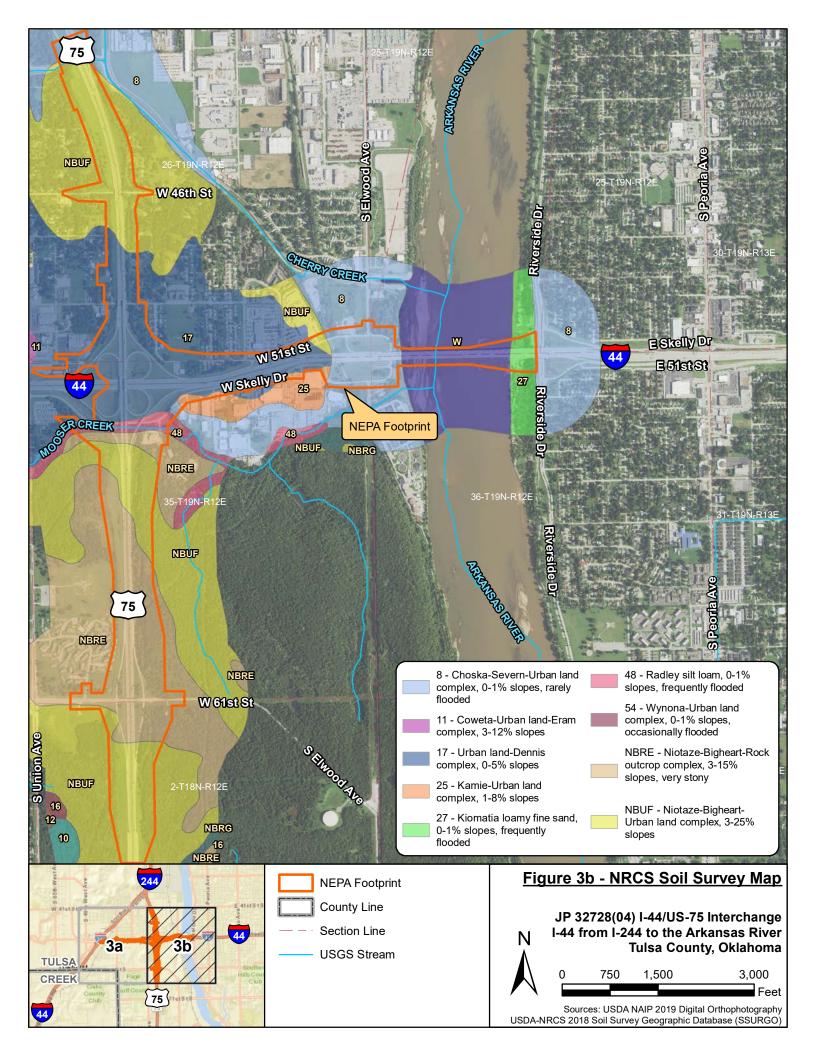
test, and hydric soils based on the regional supplement (see Data Forms). Vegetation observed includes swamp smartweed, Plowman's-wort, late-flowering thoroughwort, short-bristle horned beak sedge, rough cocklebur, and yellowdicks (*Helenium amarum*). Approximately 0.02 acre occurs within the footprint. This feature is likely subject to regulation by the USACE due to its hydrologic connection to the Arkansas River, a USGS-mapped perennial stream.

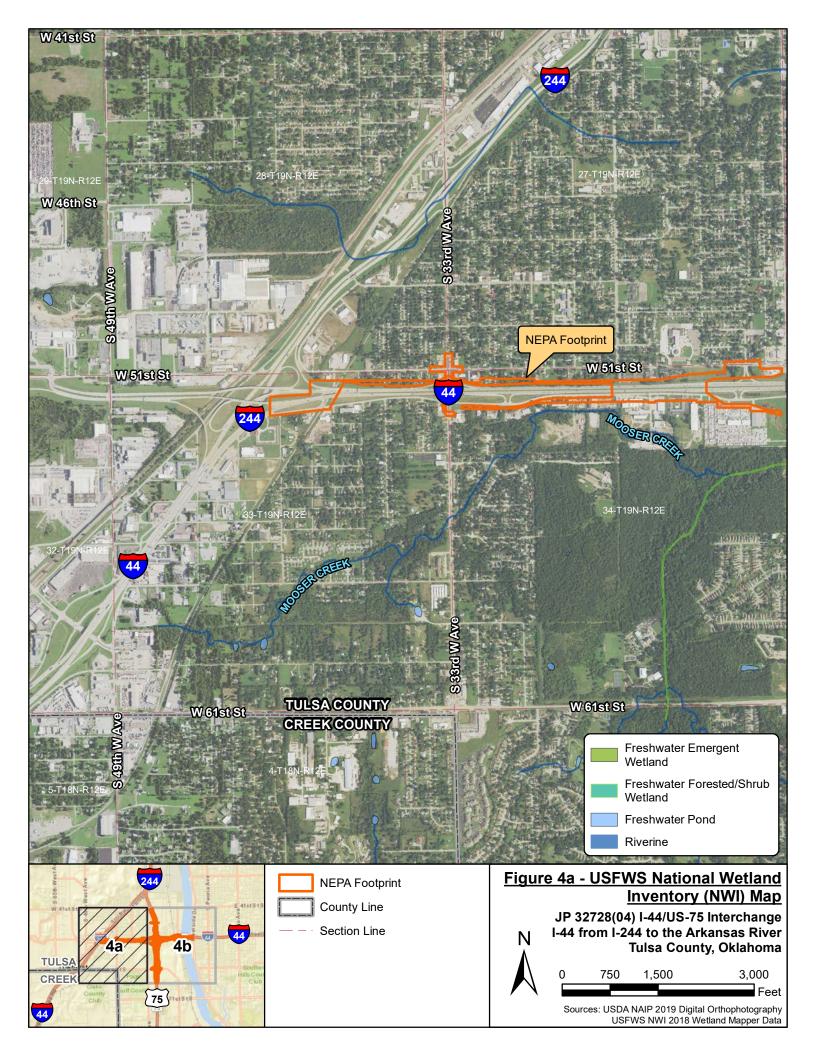
Pond 1 – This pond is not illustrated on the 1989 Sapulpa North Okla. NWI map but would be classified as a PUB3Hx (Palustrine, Unconsolidated Bottom, Mud, Permanently Flooded, Excavated Wetland). This feature is likely a man-made pond located approximately 130 feet east of the US-75 northbound lanes. Approximately 0.11 acre occurs within the footprint. No hydrologic connection between Pond 1 and any surrounding aquatic resources was observed during the site visit. Therefore, this feature is not likely subject to regulation by the USACE due to it being an isolated feature.

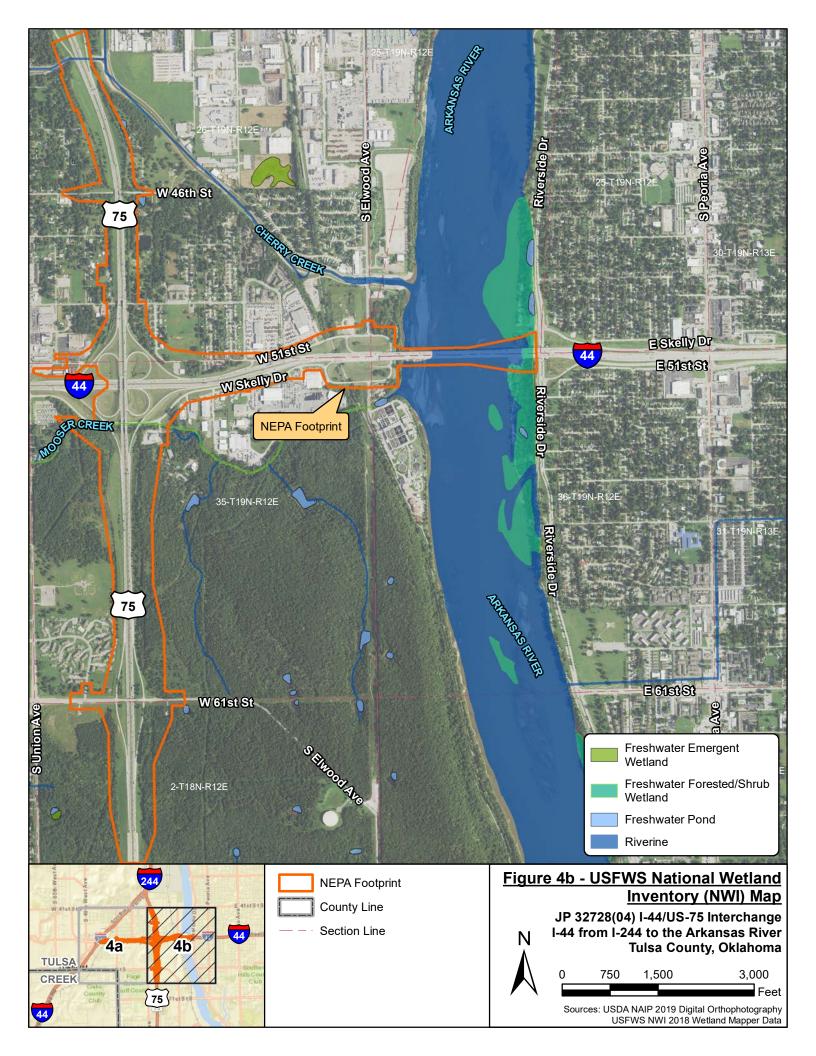


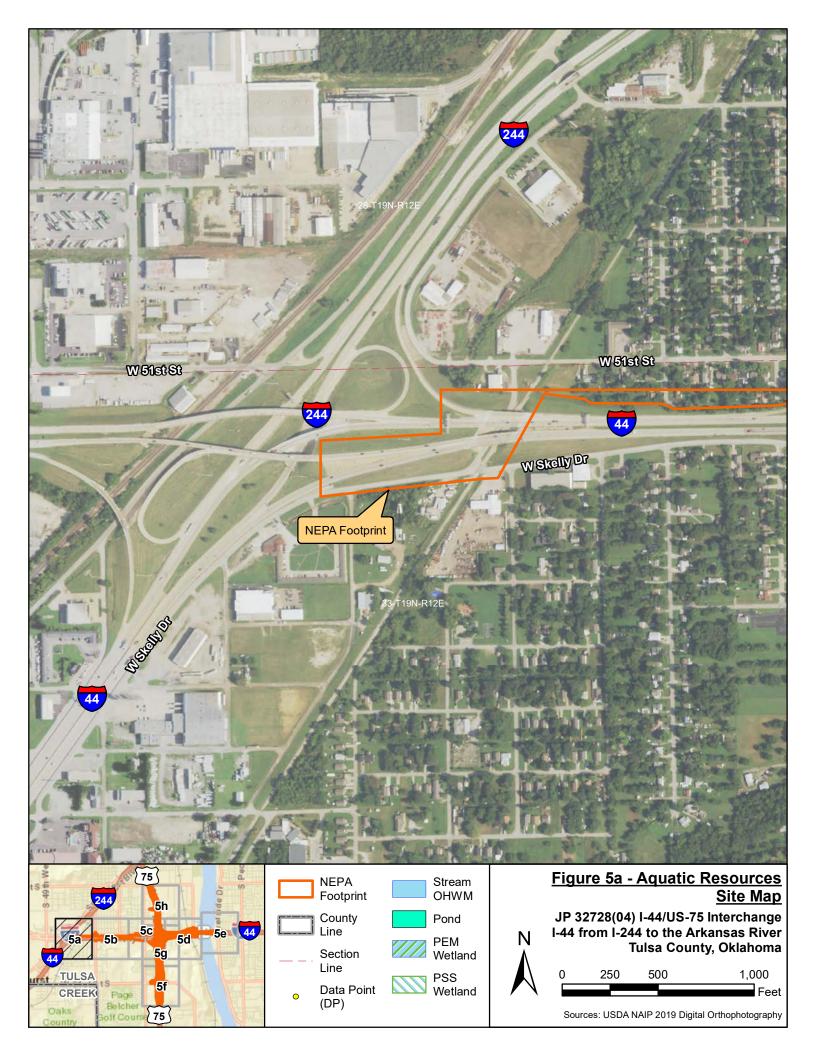


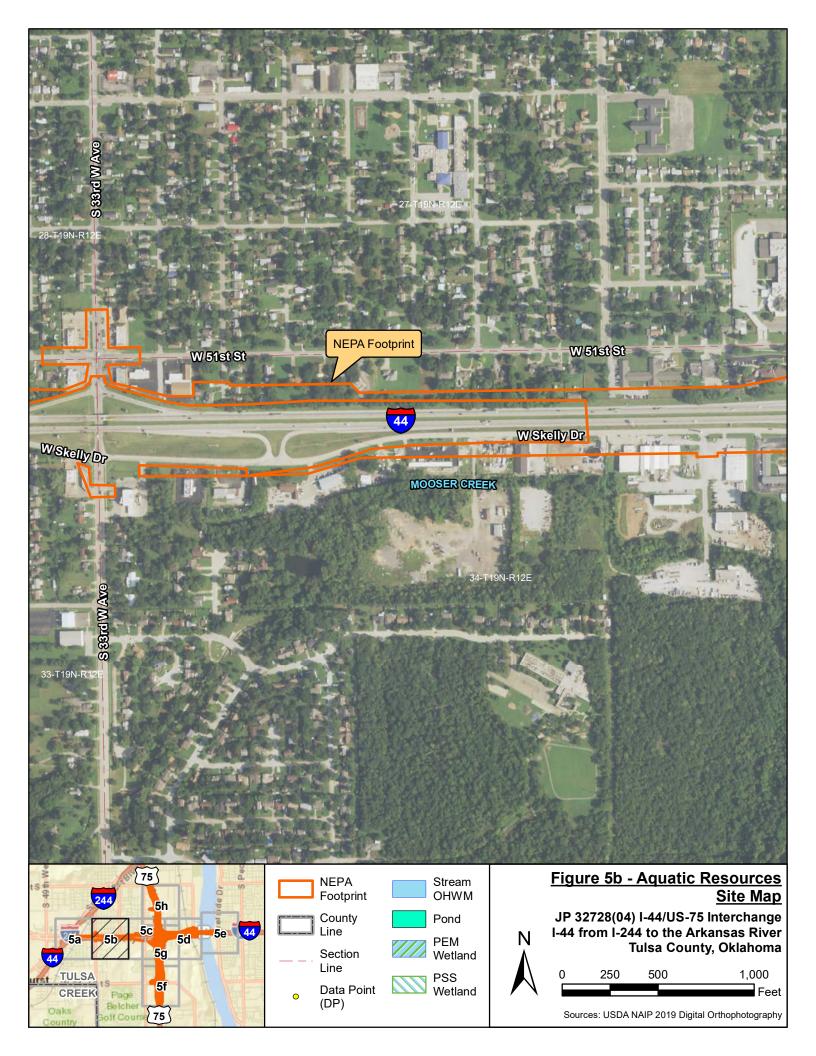


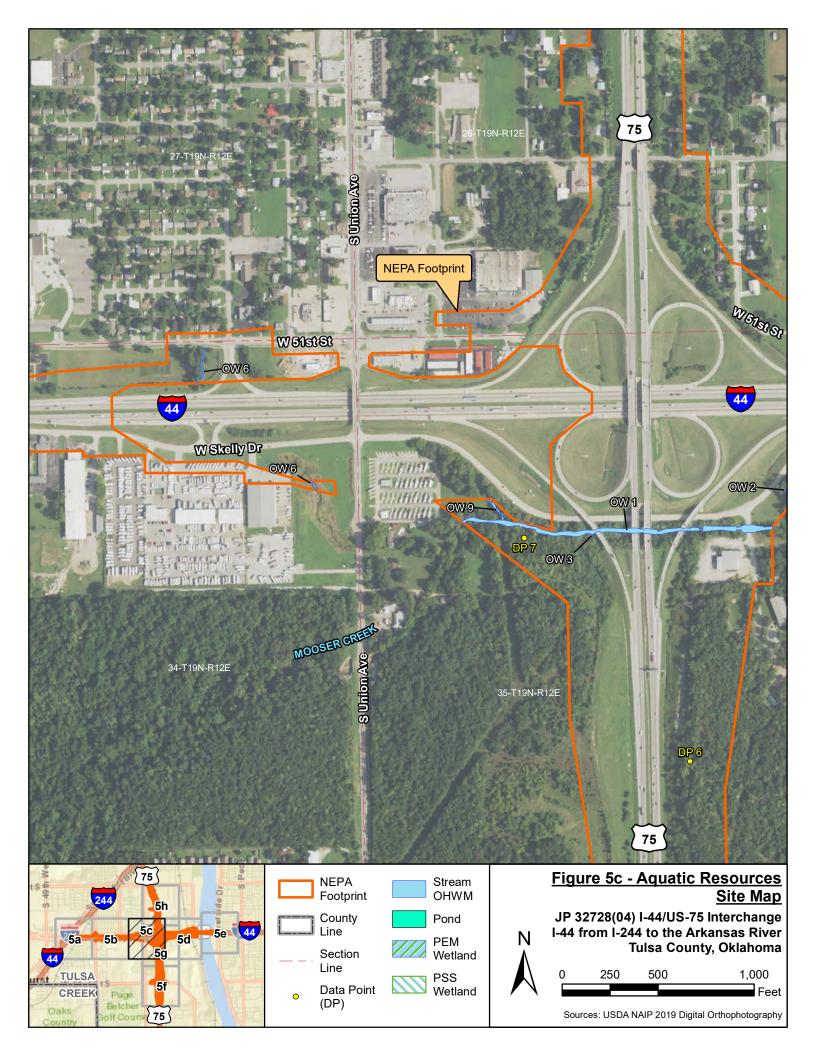


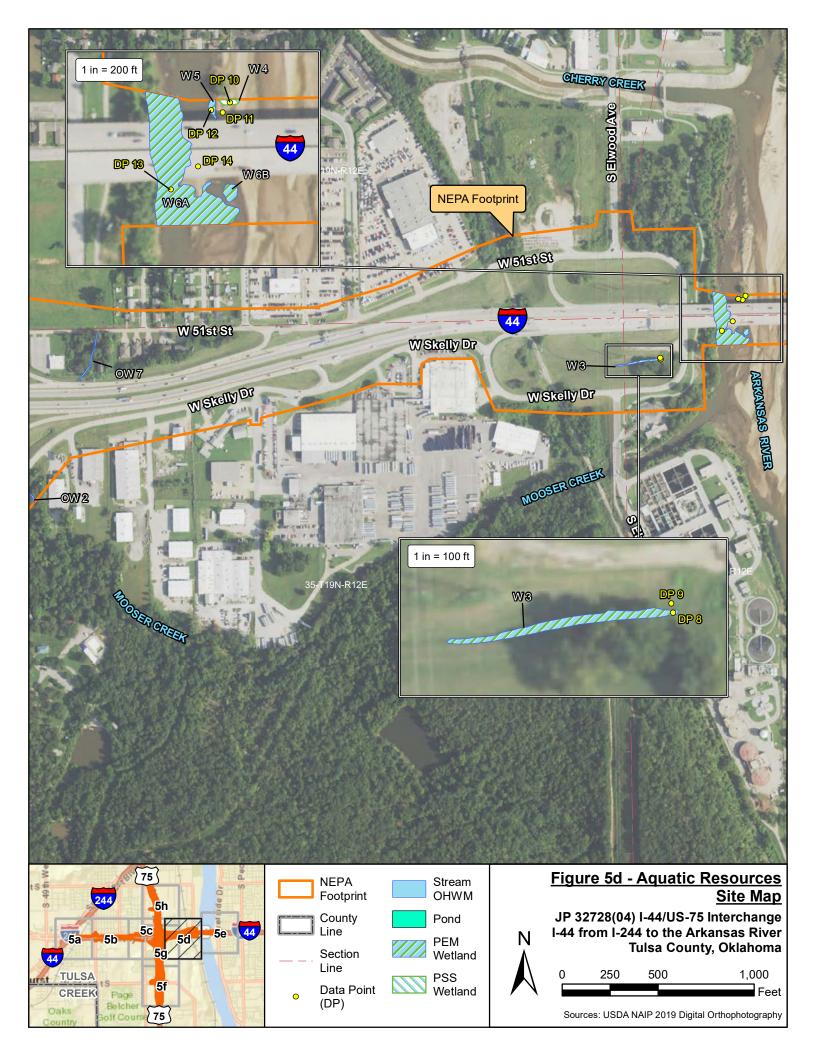


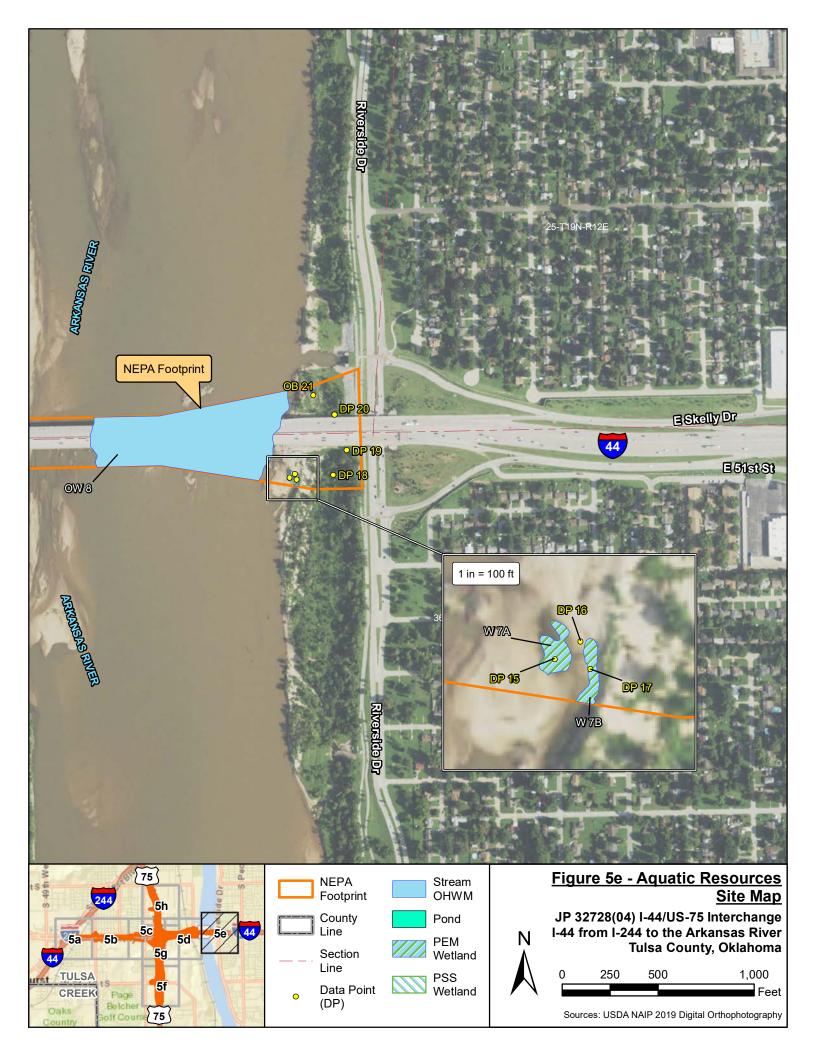


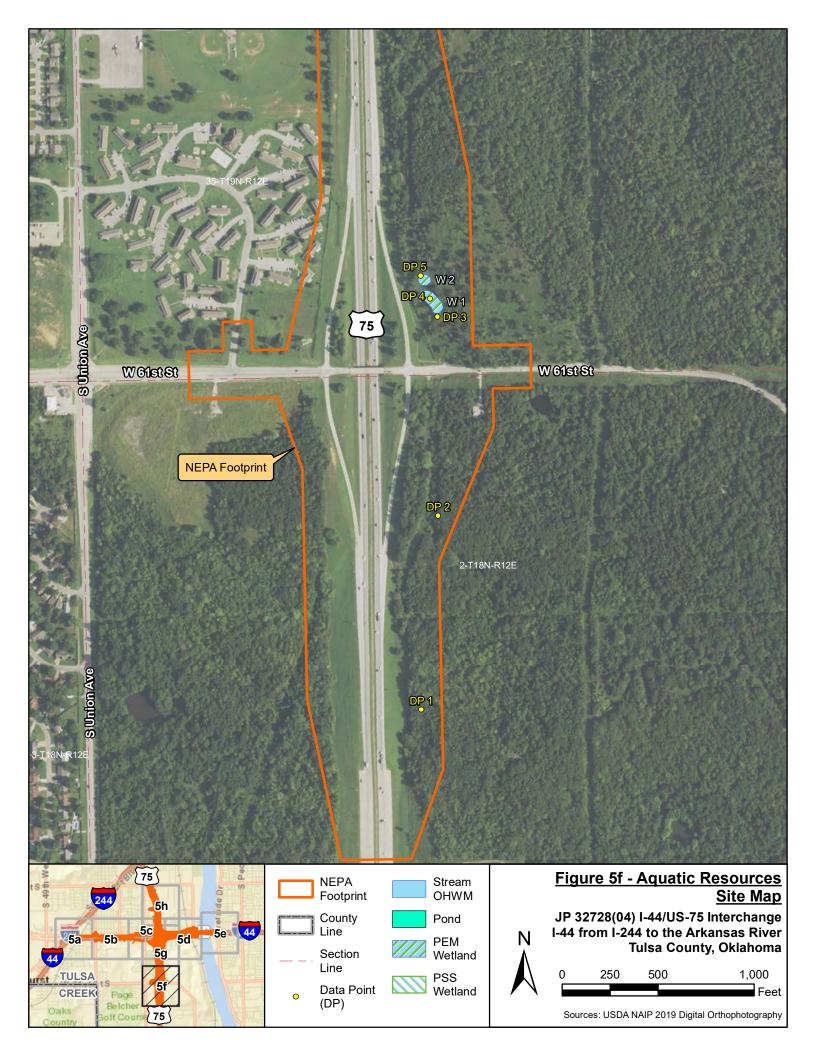


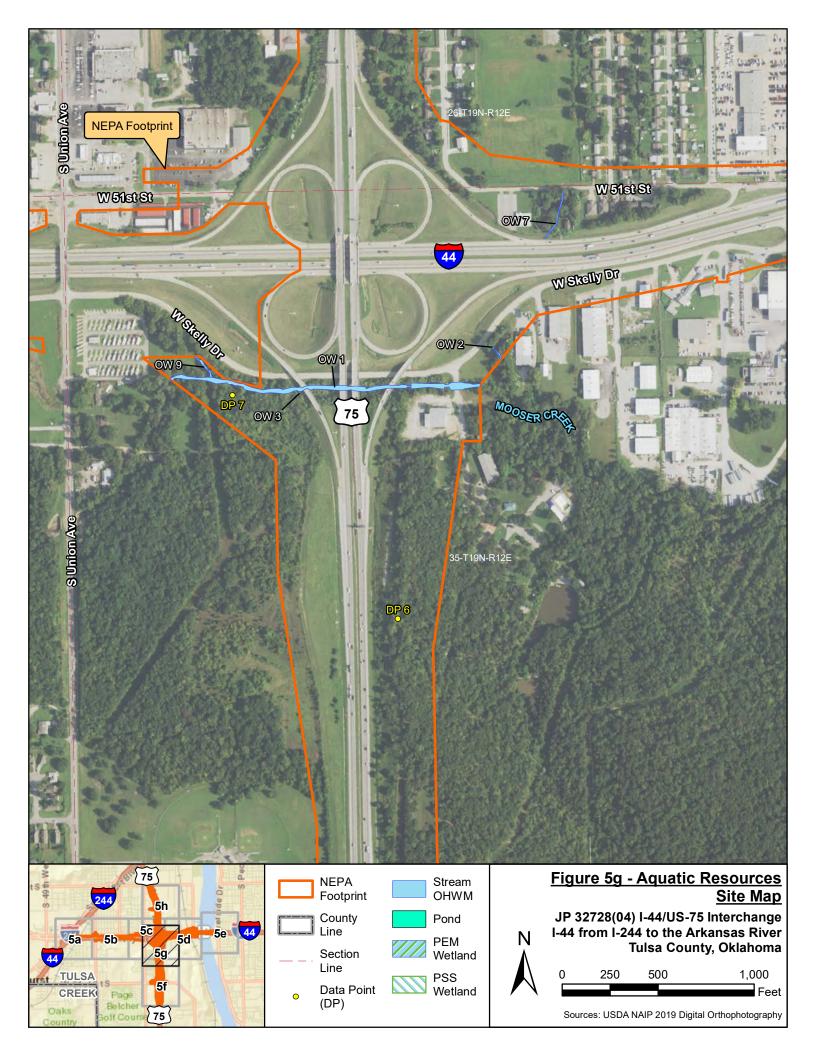


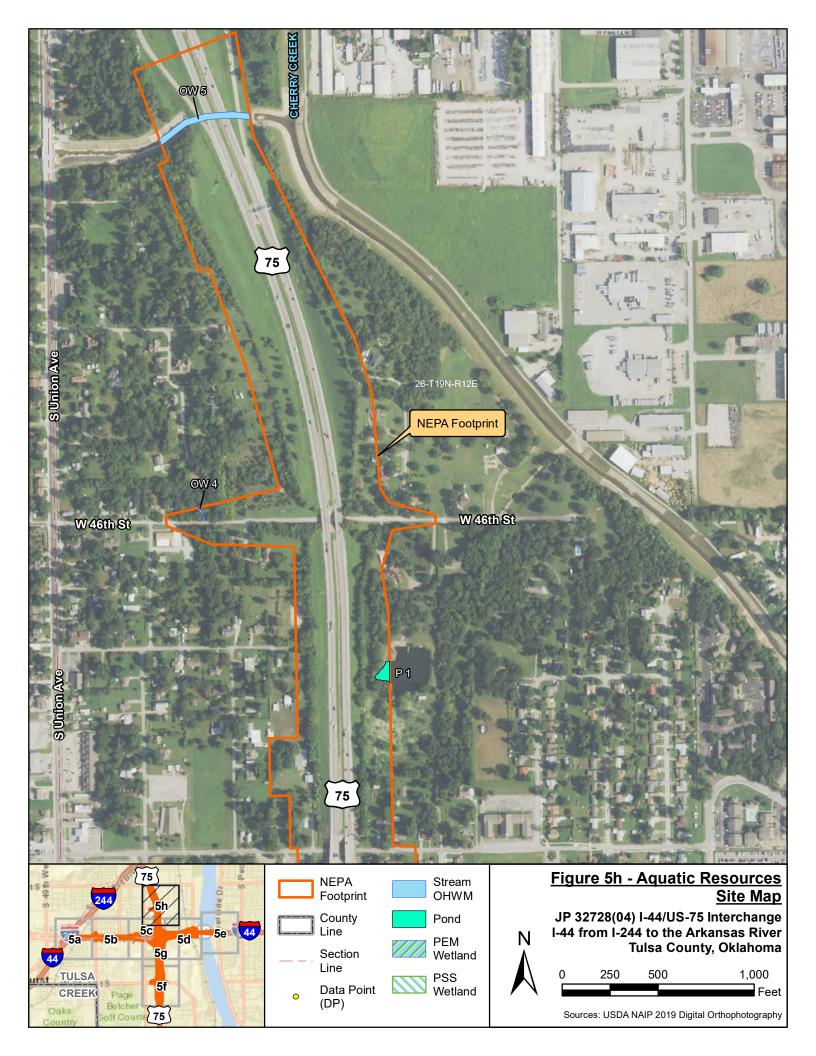














▲(PS 1): View of wooded habitat along US-75. This is suitable ABB and NLEB habitat. View is to the south.



▲ (PS 2): View of US-75 from the W. 61st Street bridge (NBI 16564). View is to the south.



▲ (PS 2): View of NBI 16564. Bridge was not fully inspected due to height and safety. View is to the west.



▲(PS 2): View of wooded habitat along US-75. This is suitable ABB and NLEB habitat. View is to the east.



▲(PS 2): View of W 2, a small PEM wetland in the forested habitat east of US-75. View is to the southeast.



 \blacktriangle (PS 2): View of W 1, a small PEM wetland in the forested habitat east of US-75. View is to the south.

Tulsa County, OK J/P No. 32728(04)



▲(PS 3): View of wooded habitat along US-75. This is suitable ABB and NLEB habitat. View is to the east.



▲(PS 4): View of shallow rocky habitat at Mooser Creek (OW 1). View is upstream to the west.



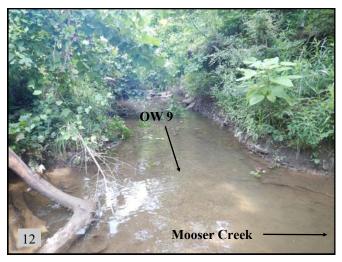
▲(PS 4): View of deep water habitat at Mooser Creek (OW 1). View is downstream to the east.



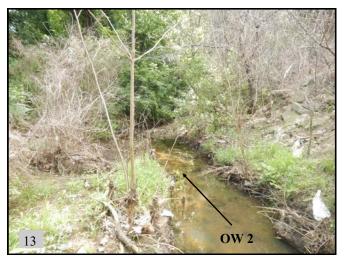
▲ (PS 4): View of Skelly Drive located north of Mooser Creek (OW 1). View is to the west.



▲(PS 4): View of OW 3, a tributary to Mooser Creek (OW 1). View is downstream to the north.



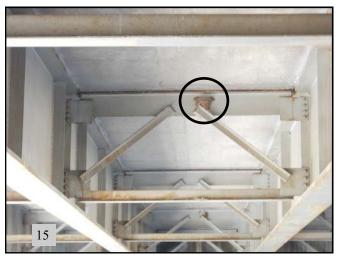
▲(PS 5): View of Mooser Creek (OW 1) and OW 9 confluence. View is to the upstream of OW 9, to the north.



▲ (PS 6): View of OW 2, an ephemeral tributary to Mooser Creek. View is downstream to the south.



▲ (PS 7): View under NBI 18268 over W. 49th St. View is to the south.



▲ (PS 7): View of barn swallow nest (circled) under NBI 18267 over W. 49th St. View is to the south.



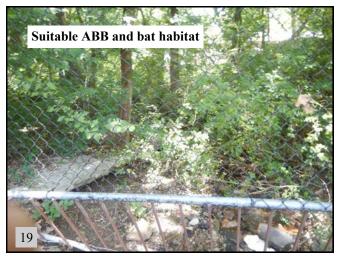
▲(PS 8): View of barn swallow nest (circled) under NBI 18254. View is to the south.



▲ (PS 8): View NBI 18255. View is to the south.



▲(PS 9): View of double culverts under W. 46th Street at OW 4. View is upstream to the south.



▲ (PS 9): View of habitat along US-75 around OW 4, an ephemeral stream. View is downstream to the north.



▲(PS 10): Triple cell RCB over Cherry Creek (OW 5). View is downstream to the east.



▲(PS 7): Concrete lined Cherry Creek (OW 5). View is upstream to the west.



▲(PS 11): Inspecting bridge for bat and/or migratory bird use. View is to the west.



▲(PS 12): Typical view of I-44. View is to the northeast.



▲(PS 13): View of OW 6 (north segment), an ephemeral stream. View is downstream to the south.

On-site photographs taken 5/9/2019 and 6/11/2019 Garver Project No. 16037034



▲(PS 14): View of OW 6 (south segment) with no riparian habitat. View is upstream to the northwest.



▲(PS 15): View of the concrete lined channel and stone banks of OW 7. View is downstream to the south.



▲ (PS 16): View of NBI 15755. Bridge could not be fully inspected due to height. View is to the west.



 \triangle (PS 17): View of NBIs 20294, 12827, and 15769. View is to the southeast.



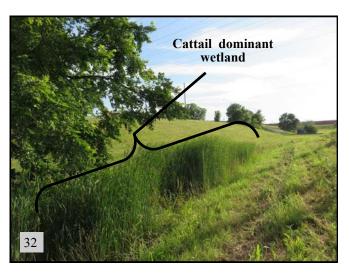
▲ (PS 18): View of NBI 15763. Bridge could not be fully inspected due to height. View is to the southeast.



▲(PS 19): View of the Arkansas River (OW 8) taken in 2019. View is upstream to the northeast.



▲(PS 19): View of the Arkansas River (OW 8) in 2019. View is to the east.



▲ (PS 20): View of W 3, an emergent wetland just west of the Arkansas River. View is to the southwest.



 \blacktriangle (PS 21): View of a PSS wetland (Wetland 4). View is to the north.



 \triangle (PS 21): View of a PEM wetland (Wetland 5). View is to the southeast.



 \blacktriangle (PS 21): View of a PEM wetland (Wetland 6A). View is to the northwest.

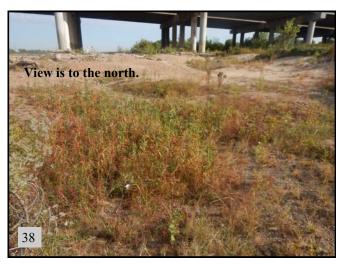


 \blacktriangle (PS 21): View of a PEM wetland (Wetland 6B). View is to the northeast.

Tulsa County, OK J/P No. 32728(04) On-site photographs taken 5/9/2019, 6/11/2019, 9/30/2020 Garver Project No. 16037034



▲ (PS 21): View of the Arkansas River (OW 8) in 2020. View is to the east.



▲ (PS 22): View of Wetland 7A, an emergent wetland on the east floodplain terrace of the Arkansas River.



 \blacktriangle (PS 22): View of a PEM wetland (Wetland 7B). View is to the north.



▲ (PS 22): View of wooded upland habitat along the east terrace of the Arkansas River. View is to the south.



▲(PS 22): View of the Arkansas River in 2020 (OW 8). View is upstream to the northwest.



▲ (PS 23): View of wooded upland habitat along the east terrace of the Arkansas River. View is to the east.

Tulsa County, OK J/P No. 32728(04) On-site photographs taken 9/30/2020 & 10/01/2020

Garver Project No. 16037034



▲ (PS 23): View of open grassland along the east terrace of the Arkansas River. View is to the west.



▲ (PS 23): View of the Arkansas River (OW 8) in 2020. View is downstream to the south.

Project/Site:	,	City/County	Tulsa		Sampling Date:	5/9/2019			
Applicant/Owner: The Oklahoma Department of Transp	city/County:ahoma Department of Transportation (ODOT) State: OK								
Investigator(s): Megan Philips-Schaap and Lacee Stan	lev		ahin Da	nge: Sec 2, T18N, R12E					
Landform (hillslope, terrace, etc.): forested Local relief (concave, convex, none): convex Slope (%): 3-5% Lat: 36.070456 Long: -96.005833 Datum: NAD83									
Slope (%): 3-5% Lat: 36.070456			· · · · · · · · · · · · · · · · · · ·						
Soil Map Unit Name: NBUF - Niotaze-Bigheart-Urban la									
Are climatic / hydrologic conditions on the site typical for	this time of yea	ar? Yes	No _	(If no, explain in Re	emarks.)				
Are Vegetation, Soil, or Hydrology	_ significantly	disturbed?	Are ⁶	'Normal Circumstances" p	resent? Yes _	NoX			
Are Vegetation, Soil, or Hydrology	_ naturally pro	blematic?	(If ne	eeded, explain any answer	s in Remarks.)				
SUMMARY OF FINDINGS - Attach site ma	p showing	samplin	g point l	ocations, transects	, important f	eatures, etc.			
Hydrophytic Vegetation Present? Yes X									
Hydric Soil Present? Yes			e Sampled		🗸				
Wetland Hydrology Present? Yes	NoX	with	in a Wetlar	nd? Yes	No <u>X</u>	_			
Remarks: This point was determined not to be within a wetland The survey area is currently experiencing exceptiona VEGETATION – Use scientific names of plan	Illy wet conditi	•	soils and v	wetland hydrology.					
	Absolute	Dominant	Indicator	Dominance Test works	choot:				
Tree Stratum (Plot size:)		Species?		Number of Dominant Sp	pecies	_			
1. Pecan (Carya illinoinensis)	35	Yes	FACW	That Are OBL, FACW, o		5 (A)			
2. Shumard's oak (Quercus shumardii)		Yes	FACW	Total Number of Domina	ant				
3				Species Across All Strat		9 (B)			
4				Percent of Dominant Sp	acies -				
5				That Are OBL, FACW, o		6% (A/B)			
Sapling/Shrub Stratum (Plot size:)	55	= Total Cov	er	Prevalence Index work	rsheet:				
1. Shumard's oak (Quercus shumardii)	15	Yes	FACW	Total % Cover of:		olv bv:			
2. Redbud (Cercis canadensis)		Yes	FACU	OBL species					
Sugar-berry (Celtis laevigata)		No	FACW	FACW species		I			
Pecan (Carya illinoinensis)		No	FACW	FAC species		I			
5. Eastern red-cedar (Juniperus virginiana)		No	FACU	FACU species		I			
5'	52	= Total Cov	er	UPL species	x 5 =				
Herb Stratum (Plot size:)		V		Column Totals:	(A)	(B)			
1. Eastern poison ivy (Toxicodendron radicans)		Yes		D	- D/A -				
2. Virginia-creeper (Parthenocissus quinquefolia) Chinese privet (Ligustrum sinense)		Yes Yes	FACU	Prevalence Index					
3.	15		FACU_	Hydrophytic Vegetatio 1 - Rapid Test for H		atation			
4				× 2 - Dominance Test		etation			
5				3 - Prevalence Inde					
6				4 - Morphological A		wide supporting			
7				data in Remarks					
8				Problematic Hydrop	hytic Vegetation	n¹ (Explain)			
9									
		= Total Cov		¹ Indicators of hydric soil					
Woody Vine Stratum (Plot size:)		- Total Gov		be present, unless distu	rbed or problem	atic.			
1. Virginia-creeper (Parthenocissus quinquefolia)	5	Yes	FACU_	Hydrophytic					
2. Eastern poison ivy (Toxicodendron radicans)	5	Yes	FAC	Vegetation	· · ·				
	10	= Total Cov	ver	Present? Yes	s_X_ No_				
Remarks: (Include photo numbers here or on a separat	,								
A positive indication of hydrophytic vegetation was ob	served (>50%	6 of domina	ant species	indexed as OBL, FACW	, or FAC).				
I .						I			

	cription: (Describe to	o the depti				or confirm	the absence o	f indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type ¹	Loc ²	Texture	Remarks
0-1	10YR 2/2	-	-	-		-	clay loam	7.55.0.55.0
1-6	10YR 4/2		-	_	_	_	clay loam	
6-14	10YR 5/4	<u> </u>	-	- -			clay	
				- ——				
				- ——				
	oncentration, D=Deple	etion, RM=I	Reduced Matrix, M	S=Masked	Sand Gra	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil								or Problematic Hydric Soils ³ :
Histosol	. ,			Gleyed Ma			_	rairie Redox (A16)
	oipedon (A2) stic (A3)			Redox (S5 d Matrix (S				rface (S7) nganese Masses (F12)
_	en Sulfide (A4)			Mucky Min				allow Dark Surface (TF12)
	d Layers (A5)			Gleyed Ma				Explain in Remarks)
	ick (A10)			d Matrix (F				, and the same of
_	d Below Dark Surface	(A11)	Redox I	Dark Surfa	ce (F6)			
Thick Da	ark Surface (A12)		Deplete	d Dark Su	rface (F7)		³ Indicators of	of hydrophytic vegetation and
_ ′	lucky Mineral (S1)		Redox I	Depression	ns (F8)			hydrology must be present,
	icky Peat or Peat (S3))					unless o	listurbed or problematic.
_	Layer (if observed):							
Type:	-h):		_				Hydric Soil F	Present? Yes No _X_
Depth (in	cnes):							
Remarks:								
No positive	indication of hydric s	olis was or	servea.					
HYDROLO	GY							
	drology Indicators:							
Primary India	cators (minimum of on	e is require	ed; check all that ap	ply)			Secondar	y Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9)		Surfa	ce Soil Cracks (B6)
	ater Table (A2)		Aquatic Fa				— Drain	age Patterns (B10)
Saturation	on (A3)		True Aqua					eason Water Table (C2)
Water M	larks (B1)		Hydrogen	Sulfide Od	dor (C1)			ish Burrows (C8)
	nt Deposits (B2)		Oxidized F			ing Roots (ation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	d Iron (C4	·)	Stunt	ed or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduction	on in Tilled	d Soils (C6	i) Geom	norphic Position (D2)
Iron Dep	oosits (B5)		Thin Muck	Surface (C7)		FAC-	Neutral Test (D5)
Inundati	on Visible on Aerial In	nagery (B7)	Gauge or	Well Data	(D9)			
Sparsely	Vegetated Concave	Surface (B	8) Other (Exp	olain in Re	marks)			
Field Obser	vations:							
Surface Wat			o X Depth (in			_		
Water Table			oX_ Depth (in		> 14"	_		
Saturation P	resent? Ye	s N	o X Depth (in	ches):	> 14"	_ Wetla	and Hydrology	Present? Yes No _X_
	oillary fringe) corded Data (stream g	nauge mor	nitoring well aerial	nhotos nr	evious ins	nections)	if available:	
December 10	oordod Data (otrodin (gaago, moi	morning went, derian	priotoo, pri	0 110 000 1110	podiono),	ii avallabio.	
Remarks:								
No positive	indication of wetland	hydrology	was observed.					

Project/Site:	(City/Cour	Tulsa		Sampling Date:	5/9/2019		
Applicant/Owner. The Oklahoma Department of Transp	roject/Site:							
Investigator(s): Megan Philips-Schaap and Lacee Stan	ley	Section						
Landform (hillslope, terrace, etc.): forested								
				(concave, convex, none).				
Soil Map Unit Name: NBUF - Niotaze-Bigheart-Urban la				hive describe	otions N/A			
-								
Are climatic / hydrologic conditions on the site typical for t						~		
Are Vegetation, Soil, or Hydrology				Normal Circumstances" p		NoX		
Are Vegetation, Soil, or Hydrology				eded, explain any answe	,			
SUMMARY OF FINDINGS – Attach site ma		Sampi	ing point i	ocations, transects	, important ie	eatures, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present? Yes		ls	the Sampled	Area				
Hydric Soil Present? Yes Wetland Hydrology Present? Yes	No		ithin a Wetlar		NoX			
Remarks:	NO							
This point was determined not to be within a wetland The survey area is currently experiencing exceptiona	lly wet conditi	,	ric soils.					
VEGETATION – Use scientific names of plant								
Tree Stratum (Plot size:)	Absolute % Cover		ant Indicator s? Status	Dominance Test work				
1. None observed				Number of Dominant Sp That Are OBL, FACW, of		(A)		
2.				Total Number of Demin		` ′		
3				Total Number of Domin Species Across All Stra		(B)		
4				Paraent of Dansinant Co				
5				Percent of Dominant Sp That Are OBL, FACW, of		(A/B)		
Capling/Charle Charles (Plateine)		= Total C	Cover	Prevalence Index work	kehoot:			
Sapling/Shrub Stratum (Plot size:) 1. None observed				Total % Cover of:		dy by:		
				OBL species				
2				FACW species				
3 4				FAC species				
5				FACU species				
5'		= Total C	Cover	UPL species				
Herb Stratum (Plot size:)				Column Totals:				
1. Sedge (Carex sp.)*			_ FACW					
2. Sand spike-rush (Eleocharis montevidensis) Eastern poison ivy (Toxicodendron radicans)		Yes	_ FACW	Prevalence Index				
3. Eastern poison by (Toxicodendron radicans) Japanese honeysuckle (Lonicera japonica)		No No	FAC FACU	Hydrophytic Vegetation X 1 - Rapid Test for H		tation		
4			_ - 	2 - Dominance Tes		tation		
5				3 - Prevalence Inde				
6				4 - Morphological A		vide supporting		
7					s or on a separate			
8 9				Problematic Hydro	ohytic Vegetation	¹ (Explain)		
10								
10.		= Total C	Cover	¹ Indicators of hydric soi				
Woody Vine Stratum (Plot size:)		101010	, , , , , , , , , , , , , , , , , , , ,	be present, unless distu	irbed or problema	atic.		
1. None observed				Hydrophytic				
2				Vegetation Present? Yes	s_X_ No_			
		= Total C	Cover	. resent: Tes				
Remarks: (Include photo numbers here or on a separat	,	J.T	on the office of the Co	Manatatica				
A positive indication of hydrophytic vegetation was ob *171 species of Carex are listed in the USACE 2018					DBL (n=75) indic	ator status.		
	<u> </u>		.,	(11, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,	, , ,	·		

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	_Type ¹ _	_Loc ²	Texture	Remarks
0-6	10YR 3/2	100	-	-			sandy clay	
6-14	10YR 5/4	99	5Y 5/8	1			sandy clay	
	entration, D=Dep	letion, RM=Re	educed Matrix, M	S=Masked	Sand Gra	ains.		PL=Pore Lining, M=Matrix.
lydric Soil Indi								for Problematic Hydric Soils ³ :
Histosol (A1	•			Gleyed Ma			_	Prairie Redox (A16)
Histic Epipe	, ,			Redox (S5)				urface (S7)
_ Black Histic _ Hydrogen S	. ,			d Matrix (S Mucky Min			_	anganese Masses (F12) nallow Dark Surface (TF12)
Trydrogen o Stratified La	, ,			Gleyed Ma				Explain in Remarks)
_ 2 cm Muck				d Matrix (F				
_	elow Dark Surface	e (A11)		Dark Surfa	,			
Thick Dark	Surface (A12)		Deplete	d Dark Su	rface (F7)		³ Indicators	of hydrophytic vegetation and
	ky Mineral (S1)		Redox I	Depressior	ns (F8)			hydrology must be present,
	Peat or Peat (S3	*					unless	disturbed or problematic.
_	er (if observed):							
Type:	- >-		-				Hydric Soil I	Present? Yes No X
	ication of hydric s	soils was obse	erved.					
emarks: No positive indi	ication of hydric s	soils was obse	erved.					
Remarks: No positive indi	ication of hydric s	soils was obse	erved.					
Remarks: No positive indi YDROLOGY	ication of hydric s			nnlv)			Seconda	ry Indicators (minimum of two required
Remarks: No positive indi YDROLOGY Vetland Hydrol Primary Indicato	ication of hydric s		check all that ar	. , ,	es (B9)			ry Indicators (minimum of two required
remarks: No positive indi YDROLOGY Vetland Hydrol Vrimary Indicato X Surface Wa	ros (minimum of o		check all that ar	ined Leave	` '		Surfa	ace Soil Cracks (B6)
YDROLOGY Vetland Hydro rimary Indicato X Surface Wa X High Water	ication of hydric s		check all that and water-Sta	ined Leave auna (B13)	, ,		Surfa Drair	ace Soil Cracks (B6) nage Patterns (B10)
remarks: No positive indi PROLOGY Vetland Hydro rimary Indicato X Surface Wa High Water	logy Indicators: ors (minimum of outer (A1) Table (A2)		check all that ar Water-Sta Aquatic Fa	ined Leave auna (B13) atic Plants	(B14)		Surfa Drair Dry-3	ace Soil Cracks (B6) nage Patterns (B10) Geason Water Table (C2)
PROLOGY Vetland Hydrol Timary Indicato X Surface Wa X High Water X Saturation (Water Mark	logy Indicators: ors (minimum of outer (A1) Table (A2)		check all that an Water-Sta Aquatic Fa True Aqua Hydrogen	ined Leave auna (B13) atic Plants Sulfide Od	(B14) lor (C1)	ing Roots	Surfa Drair Dry-S	ace Soil Cracks (B6) nage Patterns (B10)
YDROLOGY Vetland Hydrol Yimary Indicato X Surface Wa X High Water X Saturation (Water Mark	logy Indicators: ors (minimum of oater (A1) Table (A2) (A3) (A3) (A5) (A9) (A9) (A9) (A9) (A9) (A9)		check all that an Water-Sta Aquatic Fa True Aqua Hydrogen	ined Leave auna (B13) atic Plants Sulfide Od Rhizospher	(B14) lor (C1) res on Livi	-	Surfa Drair Cray (C3) Satu	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8)
YDROLOGY Vetland Hydrol Yrimary Indicato X Surface Wa X High Water X Saturation (Water Mark Sediment D	logy Indicators: ors (minimum of orter (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3		check all that an Water-Sta	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce	(B14) lor (C1) res on Livi d Iron (C4	-)	Surfa Drair Dry-\$ Cray (C3) Satu	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
YDROLOGY Vetland Hydrol Yimary Indicato X Surface Wa X High Water X Saturation (Water Mark Sediment D Drift Deposi	logy Indicators: ors (minimum of orter (A1) Table (A2) (A3) (as (B1) Deposits (B2) (as (B3) (as (B3) (as (Crust (B4))		check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	ined Leave auna (B13) atic Plants Sulfide Oo Rhizospher of Reduce on Reduction	(B14) lor (C1) res on Livi d Iron (C4	-)	Surfa Drair Cray Cray (C3) Satura Stuna 6) Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
YDROLOGY Vetland Hydro Ymary Indicato X Surface Wa X High Water X Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi	logy Indicators: ors (minimum of orter (A1) Table (A2) (A3) (as (B1) Deposits (B2) (as (B3) (as (B3) (as (Crust (B4))	ne is required	check all that and water-Sta Aquatic Faragram True Aquatic Hydrogen Oxidized Faragram Presence Recent Iro	ined Leave auna (B13) atic Plants (Sulfide Oc Rhizospher of Reduce on Reduction	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled	-)	Surfa Drair Dry-S Cray (C3) Satu Stuni 6) Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLOGY Wetland Hydrol Irimary Indicato X Surface Wa X High Water X Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation \(\)	r Crust (B4)	ne is required	check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or	ined Leave auna (B13) atic Plants Sulfide Oo Rhizospher of Reduce on Reduction Surface (G	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled C7)	-)	Surfa Drair Dry-S Cray (C3) Satu Stuni 6) Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLOGY Vetland Hydrol Y Surface Wa X Surface Wa X High Water X Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi	logy Indicators: ors (minimum of orter (A1) Table (A2) (A3) (s (B1) Deposits (B2) its (B3) or Crust (B4) tts (B5) Visible on Aerial Indepetated Concave	ne is required magery (B7) e Surface (B8)	check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp	ined Leave auna (B13) atic Plants Sulfide Oo Rhizospher of Reduce on Reductio & Surface (G Well Data plain in Rel	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)	-)	Surfa Drair Dry-S Cray (C3) Satu Stuni 6) Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLOGY Vetland Hydrol X Surface Wa X High Water X Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation (Sparsely Ve	logy Indicators: ors (minimum of orter (A1) Table (A2) (A3) (s (B1) Deposits (B2) its (B3) or Crust (B4) tts (B5) Visible on Aerial Indepetated Concave	ne is required magery (B7) e Surface (B8)	check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp	ined Leave auna (B13) atic Plants Sulfide Oo Rhizospher of Reduce on Reductio & Surface (G Well Data plain in Rel	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)	-)	Surfa Drair Dry-S Cray (C3) Satu Stuni 6) Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLOGY Vetland Hydrol X Surface Wa X High Water X Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation \ Sparsely Veterol	logy Indicators: ors (minimum of orter (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	magery (B7) e Surface (B8) es X No	check all that ag Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp	ined Leave auna (B13) atic Plants (Sulfide Oc Rhizospher of Reduce on Reductio surface ((Well Data plain in Red ches): ches):	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks) 4-8" surface	d Soils (Ce	Surfa Drair Cray (C3) Satur Stun 6) Geor FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
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YDROLOGY Vetland Hydro Vetland	logy Indicators: ors (minimum of orster (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	magery (B7) e Surface (B8) es X No es X No	check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp Depth (in	ined Leave auna (B13) atic Plants (Sulfide Oct Rhizospher of Reduce on Reduction a Surface ((Well Data plain in Reduction ches): ches): ches):	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks) 4-8" surface surface	d Soils (Ce	Surfa Drain Cray (C3) Satur Stund 6) Geor FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOGY Vetland Hydro Vetland	Ication of hydric solution of hydric solution of hydric solutions (minimum of oater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	magery (B7) e Surface (B8) es X No es X No	check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp Depth (in	ined Leave auna (B13) atic Plants (Sulfide Oct Rhizospher of Reduce on Reduction a Surface ((Well Data plain in Reduction ches): ches): ches):	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks) 4-8" surface surface	d Soils (Ce	Surfa Drain Cray (C3) Satur Stund 6) Geor FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOGY Vetland Hydrol X Surface Wa X High Water X Saturation (Water Mark Sediment D Drift Deposi Inundation (Sparsely Vetled Observation Field Observation Fourface Water Fourface Water Fourface Water Fourface Water Fourface Seaturation Presence Includes capilla Describe Record	Ilogy Indicators: Ors (minimum of orster (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	magery (B7) e Surface (B8) es X No es X No gauge, monite	check all that ag Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp Depth (in Depth (in	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductic a Surface (Well Data plain in Rel ches): ches): photos, pre	(B14) lor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks) 4-8" surface surface	Wetl	Surfa Drain Cray (C3) Satur Stund 6) Geor FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)

Applicant/Owner: The Oklahoma Department of Transportation (ODOT) Applicant/Owner: The Wegan Philips-Schaap and Lacee Stanley Section, Township, Range. Sec 35, T19N, R12E Landform (hillslope, terrace, etc.): forested Local relief (concave, convex, none): Concave Landform (hillslope, terrace, etc.): forested Local relief (concave, convex, none): Concave Soli Map Unit Name: NBRE-Nicitaze-Bigheant-Rock outcrop complex, 3-15 percent slopes, very stony NWI classification: NA Are climatic / hydrologic conditions on the site typical for this time of year? Yes	5/9/2019	Sampling Date: _	Tulsa	City/County:	,	JP 32728(04) - I-44/US-75	JF Project/Site:
Section, Township, Range Sec 35, T19N, R12E						plicant/Owner: The Oklahoma Department of Transpo	Applicant/Owne
Landform (hillslope, terrace, etc.): forested Local relief (concave, convex, none): concave Slope (%): 0-1% Lat; 36.076073 Long; -96.005401 Datum. XINDE, Soil Map Unit Name: NBRE-Nicitaze-Bigheart-Rock outcrop complex, 3-15 percent slopes, very stony; NWI classification: NAA collabel (hydrologic conditions on the site typical for this time of year? Yes No (if no, explain in Remarks.) Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes Are Vegetation Soil or Hydrology naturally problematic? (if needed, explain any answers in Remarks.) Hydrophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No Yes No X Is the Sampled Area within a Wetland? Yes No Yes No X Is the Sampled Area within a Wetland? Yes No Yes No Yes No X Is the Sampled Area within a Wetland? Yes No Yes N	Foliti.					And the standard of the standa	application owner
Slope (%): 0-1%					·		
Soil Map Unit Name: NBRE-Niotaze-Bigheart-Rock outcrop complex, 3-15 percent slopes, very stony NWI classification: NA vero clientatic / hydrologic conditions on the site typical for this time of year? Yes No X (fino, explain in Remarks.) Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes Are Nogerated (fino, explain in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important hydrophytic Vegetation Present? Yes No X (fineded, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important hydrophytic Vegetation Present? Yes No X (fineded) explain any answers in Remarks. SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important hydrophytic Vegetation and hydric soils. SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important hydrophytic Vegetation and hydric soils. SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important within a Wetland Cue to the lack of hydrophytic vegetation and hydric soils. SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important locations, transects, important locations, transects in point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils. Support of the size of point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils. Support of the size of point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils. Support of the size of point was determined not to be within a wetland due to the lack of hydrophytic vegetation indicators of hydrophytic vegetation indicators of hydrophytic vegetation indicators of hydrophytic vegetation indicators of hydrophytic vegetation for hydrophytic vegetation for hydrophytic vegetation for hydrophytic vegetation for h			ocal relief (concave,	L			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes							
Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes a naturally problematic? (If needed, explain any answers in Remarks SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important Hydrophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland Hydrology Present? Yes X No No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland President Sampled Area within a Wetland? Yes No X Is		NWI classification: N/A	ent slopes, very ston	3-15 perce	p complex,	il Map Unit Name: <u>NBRE-Niotaze-Bigheart-Rock outcr</u>	3oil Map Unit N
Absolute Stratum (Plot size: 30'		, explain in Remarks.)	No X (If	ar? Yes	s time of yea	e climatic / hydrologic conditions on the site typical for thi	Are climatic / hy
Hydrophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes Sampled Area within a Wetland? Yes Sample A	'es NoX	umstances" present? Yes	Are "Normal Ci	disturbed?	ignificantly of	e Vegetation, Soil, or Hydrology	re Vegetation
Hydrophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes Sampled Area within a Wetland? Yes Sample A	rks.)	in any answers in Remarks.)	(If needed, exp	blematic?	aturally pro	e Vegetation, Soil, or Hydrology ı	Are Vegetation
Hydric Soil Present? Yes X No X within a Wetland? Yes No	ant features, etc.	transects, important fe	g point locations	sampling	showing	JMMARY OF FINDINGS – Attach site map	SUMMARY
Hydric Soil Present? Yes X No X within a Wetland? Yes No					o_X_	ydrophytic Vegetation Present? Yes N	Hydrophytic V
Remarks: This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils. The survey area is currently experiencing exceptionally wet conditions. ### Cover Species? Status Dominant Indicator Security Security Status Number of Dominant Species That Are OBL, FACW, or FAC: Black/ack oak (Quercus marilandica)* 10 Yes UPL UPL UPL UPL UPL UPL U			e Sampled Area	Is the	o_X_	ydric Soil Present? Yes N	
This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils. The survey area is currently experiencing exceptionally wet conditions. VEGETATION — Use scientific names of plants. Tree Stratum (Plot size: 30') Absolute Species? Status 1 Black/ack oak (Quercus marilandica)' 10 Yes UPL 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species Across All Strata: 1 Percent of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species Across All Strata: 1 Percent of Dominant Species Across All Strata: 2 Percent of Dominant Species Across All Strata: 2 Percent of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species Across All Strata: 2 Percent of Dominant Species Across All Strata: 3 Percent of Dominant Species Across All Strata: 4 Percent of Dominant Species Across All Strata: 4 Percent of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species Across All Strata: 4 Percent of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 Total	<u>×</u>	Yes NoX	n a Wetland?	withi	o	/etland Hydrology Present? YesX N	Wetland Hydro
### Cover 1						emarks:	Remarks:
Absolute Species Status Indicator Species Status Status Number of Dominant Species That Are OBL, FACW, or FAC:		ydric soils.	ohytic vegetation and	,		•	
Number of Dominant Species Number of Domi		-		D		GETATION – Use scientific names of plants	/EGETATIC
Blackjack oak (Quercus marilandica)*			Statue			ree Stratum (Plot size: 30')	Tree Stratum
2	3 (A)		LIDI Number			Blackjack oak (Quercus marilandica)*	1. Blackjack o
3.	(, ,						2.
4	8 (B)	C					
5	(5)		'				
Sapling/Shrub Stratum (Plot size: 15') 15 Yes FACU Total % Cover of: Mt.	38% (A/B)						
1. Chinese privet (Ligustrum sinense) 15 Yes FACU Total % Cover of: Mit	(٨/b)	DBL, FACW, OF FAC.		= Total Cove	10		
2.		e Index worksheet:				apling/Shrub Stratum (Plot size:)	
3.	Multiply by:	% Cover of: Multipl	FACU Tota	Yes	15	Chinese privet (Ligustrum sinense)	1. Chinese pr
4.							2
5	=	ecies x 2 =	FACW s				3
Herb Stratum (Plot size:							4
Herb Stratum (Plot size:) 1. Canada goldenrod (Solidago canadensis) 25 Yes FACU FACU Prevalence Index = B/A = 2. Sedge (Carex sp.)** 20 Yes FACW Hydrophytic Vegetation Indicators 3. Bushy bluestem (Andropogon glomeratus) 10 Yes OBL							5
1. Canada goldenrod (Solidago canadensis) 25 Yes FACU 2. Sedge (Carex sp.)** 20 Yes FACW 21 Prevalence Index = B/A =			· '	= Total Cove		orb Stratum (Blot size: 5'	Harb Ctratum
2. Sedge (Carex sp.)** 3. Bushy bluestem (Andropogon glomeratus) 4. Swamp smartweed (Persicaria hydropiperoides) 5. Japanese honeysuckle (Lonicera japonica) 6. Eastern poison ivy (Toxicodendron radicans) 7. Queen Anne's-lace (Daucus carota) 8. Unknown forb 9. Unknown forb 10 Yes FACW Hydrophytic Vegetation Indicators FACU 2 - Dominance Test is >50% 5 No FAC 3 - Prevalence Index is ≤3.0¹ Cata in Remarks or on a sepan problematic Hydrophytic Vegetation 9. Problematic Hydrophytic Vegetation 10 Indicators of hydric soil and wetland be present, unless disturbed or problematic Hydrophytic Vegetation problematic Hydrophytic Vege	(B)	otals: (A)	FACU	Yes	25		
3. Bushy bluestem (Andropogon glomeratus) 4. Swamp smartweed (Persicaria hydropiperoides) 5. Japanese honeysuckle (Lonicera japonica) 6. Eastern poison ivy (Toxicodendron radicans) 7. Queen Anne's-lace (Daucus carota) 8. Unknown forb 9. Unknown forb 9. Total Cover Bushy bluestem (Andropogon glomeratus) 10 Yes FACW 10 Yes OBL 11 - Rapid Test for Hydrophytic Vegetation Indicators 10 Yes FACU 12 - Dominance Test is >50% 13 - Prevalence Index is ≤3.0¹ 14 - Morphological Adaptations¹ (Remarks or on a sepan personal in Remarks or on a sepan personal indicators 10 Yes FACU 12 - Dominance Test is >50% 13 - Prevalence Index is ≤3.0¹ 14 - Morphological Adaptations¹ (Remarks or on a sepan personal in Remarks or on a sepan personal indicators 10 Yes FACU 12 - Dominance Test is >50% 13 - Prevalence Index is ≤3.0¹ 14 - Morphological Adaptations¹ (Remarks or on a sepan personal in Remarks or on a sepan personal in Remarks or on a sepan personal indicators of hydric soil and wetland be present, unless disturbed or problematic hydrophytic Vegetation Indicators or Hydrophytic Vegetat		alence Index = B/A =				C/ (C)**	C/ (O-
4. Swamp smartweed (Persicaria hydropiperoides) 5. Japanese honeysuckle (Lonicera japonica) 6. Eastern poison ivy (Toxicodendron radicans) 7. Queen Anne's-lace (Daucus carota) 8. Unknown forb 9. Unknown forb 9. Total Cover 10. Yes OBL 2 - Dominance Test for Hydrophytic Vegetat 2 - Dominance Test is >50% 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Find the data in Remarks or on a sepan problematic Hydrophytic Vegetat) 10. 1 - Rapid Test for Hydrophytic Vegetat 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Find the data in Remarks or on a sepan problematic Hydrophytic Vegetat) 10. 1 - Rapid Test for Hydrophytic Vegetation is >50% 11. The distribution of Hydrophytic Vegetation is >50% 12. The distribution of Hydrophytic Vegetation is >50% 13. The distribution of Hydrophytic Vegetation is >50% 14. The problematic Hydrophytic Vegetation is >50% 15. No							Puchy blue
5. Japanese honeysuckle (Lonicera japonica) 10 Yes FACU 2 - Dominance Test is >50% 6. Eastern poison ivy (Toxicodendron radicans) 5 No FAC 3 - Prevalence Index is ≤3.0¹ 7. Queen Anne's-lace (Daucus carota) 8. Unknown forb 5 No - 9		•				Swamp smartwood (Parsicaria hydroninaroides)	Swamp er
6. Eastern poison ivy (Toxicodendron radicans) 7. Queen Anne's-lace (Daucus carota) 8. Unknown forb 5 No - 9. Problematic Hydrophytic Vegetat 10. 90 = Total Cover 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (R data in Remarks or on a sepa - Problematic Hydrophytic Vegetat 1 Indicators of hydric soil and wetland be present, unless disturbed or problematic depresent, unless disturbed or problematic hydrophytic vegetat	J					Innones hanguagella (Laminara innonica)	1000000
7. Queen Anne's-lace (Daucus carota) 8. Unknown forb 5 No - 4 - Morphological Adaptations¹ (I data in Remarks or on a separation of the se							- Cootom no
8. Unknown forb 9.	1 (Provide supporting					O A /D	
9 Problematic Hydrophytic Vegetar 10 90 = Total Cover	parate sheet)	ta in Remarks or on a separate	——I— ,			Unknown forh	Linknown
10	≀tation¹ (Explain)	ematic Hydrophytic Vegetation ¹				·	0
Woody Vine Stratum (Plot size: 30' 90 = Total Cover be present, unless disturbed or problem.							
woody vine Stratum (Piot size:)	, 0,	,		= Total Cov	90	30'	
A Southern dewperry (Rupus trivialis) 5 Yes FACU I			FACU	Yes	5	Southern dewberry (Rubus trivialis)	Southern (
			Hydrop				
Present? Yes No	No X		Present				2
= Total Cover Remarks: (Include photo numbers here or on a separate sheet.)	_		er	= Total Cove		amarka: (Include photo pumbare have as as a series	Domorlini /I

Depth	cription: (Describe Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
0-2	10YR 3/1	100	-				sandy clay	
2-10	10YR 3/1	99	5Y 5/8	_ 1	C	PL_	sandy clay	
10-18	10YR 4/2	100	-	-	-	-	sandy clay	
1- 0.0							2,	
Hydric Soil	oncentration, D=De	pletion, RM=	Reduced Matrix, M	S=Masked	Sand Gra	ains.		PL=Pore Lining, M=Matrix. r Problematic Hydric Soils³:
Histosol			Sandy	Gleyed Ma	triv (SA)			airie Redox (A16)
_	pipedon (A2)			Redox (S5			Dark Sur	. ,
	istic (A3)			d Matrix (S				ganese Masses (F12)
_	en Sulfide (A4)			Mucky Mir	,		_	Illow Dark Surface (TF12)
	d Layers (A5)			Gleyed Ma				rplain in Remarks)
	uck (A10)		Deplete	ed Matrix (I	F3)			
Deplete	d Below Dark Surfa	ce (A11)	Redox	Dark Surfa	ice (F6)			
	ark Surface (A12)			ed Dark Su	, ,			f hydrophytic vegetation and
	Mucky Mineral (S1)		Redox	Depression	ns (F8)			ydrology must be present,
	ucky Peat or Peat (unless di	sturbed or problematic.
	Layer (if observed):						
Type:	ichee):		_				Hydric Soil Pr	resent? Yes No _×
Depth (in Remarks:	cnes).		<u> </u>					
WDD01.0								
HYDROLO								
-	drology Indicators		di abaak all that a	anlu)			Cocondon	Indicators (minimum of two required)
	cators (minimum of	one is require			oo (PO)			Indicators (minimum of two required)
	Water (A1)			ined Leave				e Soil Cracks (B6)
_	ater Table (A2)			auna (B13)			_	ge Patterns (B10) eason Water Table (C2)
X Saturati	Marks (B1)		Hydrogen	atic Plants	, ,			sh Burrows (C8)
	nt Deposits (B2)			Rhizosphe		ina Poots		tion Visible on Aerial Imagery (C9)
	posits (B3)			of Reduce		-	—	d or Stressed Plants (D1)
	at or Crust (B4)		_	n Reducti	,	,		orphic Position (D2)
	posits (B5)			Surface (2 00113 (00		leutral Test (D5)
	ion Visible on Aerial	Imagery (B7	_	Well Data	,			iounal Foot (50)
_	y Vegetated Conca	0 , .		plain in Re				
Field Obser			, `					
Surface Wat		Yes_X_N	o Depth (in	ches):	1"	_		
Water Table	Present?	Yes X	lo Depth (in	ches):	16"	_		
Saturation P			lo Depth (in		surface	 Wetl	and Hydrology F	Present? Yes X No
	pillary fringe)							
			ntoring well aerial	pnotos, pr	evious ins	pections),	ıt avaılable:	
	ecorded Data (strear	n gauge, mor	moning wen, denai			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Describe Re	ecorded Data (strear	m gauge, mor	morning went, derical					
Describe Re	•			east one n	rimary ind			
Describe Re	ecorded Data (strear			east one p	rimary ind			
Describe Re	•			east one p	rimary ind			

Project/Site:	(City/County	Tulsa		Sampling Date:	5/9/2019
Project/Site:The Oklahoma Department of Transp	ortation (ODC	OT)		State: OK		
Investigator(s): Megan Philips-Schaap and Lacee Stant	ey ,			nge: Sec 35, T19N, R12		
				(concave, convex, none):		
	1			(concave, convex, none).		
Soil Map Unit Name: NBRE-Niotaze-Bigheart-Rock out						
Are climatic / hydrologic conditions on the site typical for t						
Are Vegetation, Soil, or Hydrology			Are "	'Normal Circumstances" p	resent? Yes	NoX
Are Vegetation, Soil, or Hydrology	naturally pro	blematic?	(If ne	eeded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	, important fe	eatures, etc.
Hydrophytic Vegetation Present? Yes X						
	No		e Sampled			
Wetland Hydrology Present? Yes X	No	with	in a Wetlar	1d? Yes^	No	
Remarks: This point was determined to be within a wetland due	to the preser	nce of all 3	wetland cr	iteria (Wetland 1)		
The survey area is currently experiencing exceptiona			wegand on	iteria (vvetiario 1).		
VECTATION Line orientific normal of plant						
VEGETATION – Use scientific names of plant		Dominant	Indicator	Dominanaa Taat wark	about:	
Tree Stratum (Plot size:)	Absolute <u>% Cover</u>	Dominant Species?		Dominance Test works Number of Dominant Sp		
1. Pecan (Carya illinoinensis)	5	Yes	FACW	That Are OBL, FACW, of		3 (A)
2				Total Number of Domina	ont	
3				Species Across All Stra		3 (B)
4				Percent of Dominant Sp	nocion	
5				That Are OBL, FACW, of		0% (A/B)
Sanling/Shaub Streeture / Diet sine	5	= Total Co	ver	Prevalence Index work	kehoot:	
Sapling/Shrub Stratum (Plot size:) 1. None observed				Total % Cover of:		ly by:
				OBL species		
2.				FACW species		
3 4				FAC species		
5				FACU species		
5'		= Total Co	ver	UPL species		
Herb Stratum (Plot size:)				Column Totals:		I
1. Nimblewill (Muhlenbergia schreberi)	35	Yes				
2. Oklahoma sedge (Carex oklahomensis) 3. Swamp smartweed (Persicaria hydropiperoides)		Yes	OBL_	Prevalence Index		
3. Swamp smarweed (Persicana nydropiperoides) Creeping primrose-willow (Ludwigia repens)	$-\frac{10}{10}$	No No	OBL OBL	Hydrophytic Vegetation 1 - Rapid Test for H		4-4:
Aster sp.*	$-\frac{10}{10}$	No No	FAC	× 2 - Dominance Tes	, , ,	tation
Sagittaria sp.**		No No	OBL	3 - Prevalence Inde		
7. Fringed greenbrier (Smilax bona-nox)		No	FACU	4 - Morphological A		vide supporting
			1700		s or on a separate	
8 9				Problematic Hydron	ohytic Vegetation	¹ (Explain)
10						
10.		= Total Co	ver	¹ Indicators of hydric soil		
Woody Vine Stratum (Plot size:)		7014.00	• • • • • • • • • • • • • • • • • • • •	be present, unless distu	irbed or problema	atic.
1. None observed				Hydrophytic		
2				Vegetation Present? Yes	s_X_ No_	
		= Total Co	ver	resent: 165	, NO _	
Remarks: (Include photo numbers here or on a separat	,	· · · · · · ·		1.11 OBL EACH	(EAC)	
A positive indication of hydrophytic vegetation was ob *19 species of Symphyotrichum are listed in the 2018						
** 10 species of Sagittaria are listed in the USACE 20						

Profile Desc	cription: (Describe	to the depth	needed to docur	nent the i	ndicator	or confirm	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)		Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks
0-6	10YR 2/1	75	5Y 4/6	15	C	M	sandy clay	
1							2	
	oncentration, D=Dep	pletion, RM=Re	educed Matrix, M	S=Masked	Sand Gra	ains.		: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Hydric Soil			0	21	(O.1)			•
Histosol	pipedon (A2)			Gleyed Ma Redox (S5				Prairie Redox (A16) urface (S7)
. —	istic (A3)			d Matrix (S				anganese Masses (F12)
ı —	en Sulfide (A4)			Mucky Mir				hallow Dark Surface (TF12)
	d Layers (A5)			Gleyed Ma				Explain in Remarks)
_	uck (A10)			d Matrix (I				,,
_	d Below Dark Surfac	e (A11)	X Redox I					
	ark Surface (A12)				ırface (F7)		3Indicators	of hydrophytic vegetation and
Sandy N	Mucky Mineral (S1)		Redox I	Depressio	ns (F8)		wetland	d hydrology must be present,
	ucky Peat or Peat (S						unless	disturbed or problematic.
Restrictive	Layer (if observed)	:						
Type:			_				Unidada Call	Present? Yes X No
Depth (in	ches):		_				Hydric Soil	Present? Yes X No No
Remarks:								
A positive in	ndication of hydric s	oil was observ	red.					
HYDROLO	GY							
Wetland Hv	drology Indicators:							
1	cators (minimum of		· check all that ar	nlv)			Seconda	ry Indicators (minimum of two required)
X Surface		one io required	X Water-Sta		oc (BQ)			ace Soil Cracks (B6)
_	ater Table (A2)		Aquatic Fa		. ,		_	nage Patterns (B10)
X Saturati			Aquatic Fa		-			Season Water Table (C2)
	Marks (B1)		Hydrogen					
	nt Deposits (B2)		Oxidized F			ina Posts		rfish Burrows (C8) Iration Visible on Aerial Imagery (C9)
	posits (B3)		Oxidized F			-	—	nation visible on Aerial imagery (C9)
ı —			_		•	•		morphic Position (D2)
- '	at or Crust (B4) posits (B5)		Recent Iro			J Solis (Co		:-Neutral Test (D5)
—	, ,	Imagani (P7)		,	,		X FAC	-Neutral Test (D3)
ı —	on Visible on Aerial y Vegetated Concav	,	Gauge or Other (Exp					
Field Obser		e Surface (Bo)	Other (Exp	Jaili III Ke	illaiks)			
		/aa X Na	Depth (in	ahaa\.	4-6"			
Surface Wat	er Present?	Y X	Depth (in	cnes):	surface	-		
Water Table	Present?	es No	Depth (in	cnes):		-		- ×
Saturation P	resent? \ pillary fringe)	es No	Depth (in	ches):	surface	_ Wetl	and Hydrology	y Present? Yes X No No No
	corded Data (stream	n gauge, monit	oring well, aerial	photos, pr	evious ins	pections).	if available:	
	(3 3 ,	J, 2.2.3.6	,		, ,		
Remarks:								
l	ndication of wetland	hydrology wa	s observed (at le	ast one n	rimary ind	licator).		
' ' ' ' ' ' ' '		,	(2.3.10	P	. ,	- /-		

Project/Site:	(City/Count	Tulsa		Sampling Date:	5/9/2019
Applicant/Owner: The Oklahoma Department of Trans	portation (ODC	OT)	у	State: OK		
Investigator(s): Megan Philips-Schaap and Lacee Sta	nley		ownshin Ra	nge: Sec 35, T19N, R12		
Landform (hillslope, terrace, etc.): forested				(concave, convex, none):		
	I			(defidave, cerivex, fiche).		ı
Soil Map Unit Name: NBRE-Niotaze-Bigheart-Rock ou						
Are climatic / hydrologic conditions on the site typical for						
				'Normal Circumstances" p		No. X
Are Vegetation, Soil, or Hydrology Are Vegetation, Soil, or Hydrology						NOX
SUMMARY OF FINDINGS – Attach site ma				eeded, explain any answe	,	eatures, etc.
	No	Ť	-	· · · · · · · · · · · · · · · · · · ·	•	
	No	ls t	he Sampled	Area		
	No	with	hin a Wetlar	nd? Yes <u>X</u>	No	_
Remarks: This point was determined to be within a wetland du The survey area is currently experiencing exception			3 wetland cr	iteria (Wetland 2).		
VEGETATION – Use scientific names of plar	nts.					
	Absolute		t Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size:) 1. None observed	% Cover			Number of Dominant S That Are OBL, FACW,		(A)
2 3				Total Number of Domin		(B)
4				Percent of Dominant S		` ,
5				That Are OBL, FACW,		(A/B)
Sapling/Shrub Stratum (Plot size:15'		= Total Co	over	Prevalence Index wor	ksheet:	
1. Deciduous holly (Ilex decidua)	2	Yes	FACW	Total % Cover of:		oly by:
2.				OBL species		
3.				FACW species	x 2 =	
4.				FAC species	x 3 =	
5				FACU species	x 4 =	
5'	2	= Total Co	over	UPL species	x 5 =	
Herb Stratum (Plot size:) Rice cut grass (Leersia oryzoides)	25	Yes	OBL	Column Totals:	(A)	(B)
Sedge (Carex sp.)*	<u></u>	Yes	FACW	Prevalence Index	= B/A =	
Perennial rye grass (Lolium perenne)	$\frac{10}{2}$	No	FACU	Hydrophytic Vegetation		
Fringed greenbrier (Smilax bona-nox)		No	FACU	X 1 - Rapid Test for I		tation
5				2 - Dominance Tes		
6				3 - Prevalence Inde	ex is ≤3.0 ¹	
7				4 - Morphological A		
8.					s or on a separate	· ·
9				Problematic Hydro	phytic Vegetation	(Explain)
10				landing to un of building on	il and wellend by	
Woody Vine Stratum (Plot size:)	44	= Total Co	over	¹Indicators of hydric so be present, unless dist		
				Hydrophytic		
2				Vegetation Present? Ye	s_X_ No_	
Remarks: (Include photo numbers here or on a separa		= Total Co	over			
A positive indication of hydrophytic vegetation was certain the USACE 2018	bserved (Rapid				OBL (n=75) indic	ator status.

Depth	ription: (Describe Matrix		Redo	x Features	3			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks
0-6	10YR 3/1	100	-				sandy clay	
6-18	10YR 3/2		10YR 5/6				sandy clay	
¹Type: C=Co	oncentration, D=Dep	letion RM=R	educed Matrix. M	- ——— S=Masked	Sand Gra	ins.	2Location:	PL=Pore Lining, M=Matrix.
Hydric Soil I								or Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed Ma	trix (S4)		Coast P	rairie Redox (A16)
Histic Ep	pipedon (A2)		Sandy	Redox (S5))		Dark Su	rface (S7)
Black Hi	stic (A3)		Strippe	d Matrix (S	6)		Iron-Ma	nganese Masses (F12)
Hydroge	n Sulfide (A4)		Loamy	Mucky Min	eral (F1)		Very Sh	allow Dark Surface (TF12)
Stratified	Layers (A5)			Gleyed Ma			Other (E	Explain in Remarks)
2 cm Mu	, ,			ed Matrix (F				
	d Below Dark Surfac	e (A11)		Dark Surfa	. ,			
_	ark Surface (A12)		X Deplete		, ,			of hydrophytic vegetation and
	lucky Mineral (S1)		Redox	Depressior	ıs (F8)			hydrology must be present,
	icky Peat or Peat (S						unless d	disturbed or problematic.
Type:	_ayer (if observed):							
Depth (inc	ches):		_				Hydric Soil F	Present? Yes X No
Remarks:			_					
HYDROLO								
-	drology Indicators:							
	cators (minimum of o	ne is required	t; check all that a	oply)			<u>Secondar</u>	y Indicators (minimum of two required)
X Surface	, ,		Water-Sta	ined Leave	es (B9)		Surfa	ce Soil Cracks (B6)
X High Wa	ter Table (A2)		Aquatic Fa	auna (B13)			Drain	age Patterns (B10)
X Saturation				atic Plants	, ,			Season Water Table (C2)
Water M	arks (B1)		Hydrogen	Sulfide Od	lor (C1)		Crayf	ish Burrows (C8)
Sedimer	nt Deposits (B2)		Oxidized I	Rhizospher	es on Liv	ng Roots	(C3) Satur	ation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Presence	of Reduce	d Iron (C4	-)		ed or Stressed Plants (D1)
Algal Ma	it or Crust (B4)		Recent Iro	on Reduction	on in Tille	d Soils (Ce	6) X Geom	norphic Position (D2)
Iron Dep	osits (B5)		Thin Muck	Surface (C7)		X FAC-	Neutral Test (D5)
Inundation	on Visible on Aerial I	magery (B7)	Gauge or	Well Data	(D9)			
Sparsely	Vegetated Concave	Surface (B8) Other (Ex	plain in Re	marks)			
Field Observ								
Surface Water	er Present? Y	es <u> </u>	Depth (in Depth (in	ches):	6"	_		
Water Table	Present? Y	es _X No	Depth (in	ches):	surface	_		
Saturation Pr	resent? Y	es _X_ No	Depth (in	iches):	surface	_ Wetl	and Hydrology	Present? Yes X No
	corded Data (stream	gauge, moni	toring well, aerial	photos, pre	evious ins	pections),	if available:	
Remarks:	ndigation of water-	hydrology	ne observed (at l	nact one :	imon, in-	icator)		
A positive in	ndication of wetland	nyarology wa	as observed (at le	asi one pi	imary inc	icator).		

Project/Site:JP 32728(04) - I-44/US-75		City/County	Tulsa		Sampling Date	5/9/2019
Applicant/Owner: The Oklahoma Department of Transp	ortation (OD0	OT)		State: OK		
Investigator(s): Megan Philips-Schaap and Lacee Stanl			umahin Da			L
Landform (hillslope, terrace, etc.): forested		96 (Local relier	(concave, convex, none):		
Slope (%): 1-2% Lat: 36.083712		Long:				<u></u>
Soil Map Unit Name: NBUF - Niotaze-Bigheart-Urban la						
Are climatic / hydrologic conditions on the site typical for t	his time of yea	ar? Yes	No _	(If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrology	_significantly	disturbed?	Are ⁶	Normal Circumstances" p	resent? Yes _	NoX
Are Vegetation, Soil, or Hydrology	_ naturally pro	blematic?	(If ne	eded, explain any answer	s in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	p showing	samplin	g point l	ocations, transects	, important	features, etc.
Hydrophytic Vegetation Present? Yes						
Hydric Soil Present? Yes	No X		e Sampled		🗸	
Wetland Hydrology Present? Yes X	No	with	in a Wetlar	nd? Yes	No _X	_
Remarks: This point was determined not to be within a wetland		, ,	ohytic vege	tation and hydric soils.		
The survey area is currently experiencing exceptiona	lly wet conditi	ons.				
VEGETATION – Use scientific names of plant	s.					
30'	Absolute	Dominant		Dominance Test works	sheet:	
Tree Stratum (Plot size:) 1. Post oak (Quercus stellata)	<u>% Cover</u> 40	Species? Yes	Status FACU	Number of Dominant Sp		3
2. Green ash (Fraxinus pennsylvanica)		No	FACW	That Are OBL, FACW, o	or FAC:	(A)
3. Common hackberry (Celtis occidentalis)	$-\frac{10}{5}$	No No	FAC	Total Number of Domina		6
4.				Species Across All Strat	ia:	(B)
5.				Percent of Dominant Sp		50%
	55	= Total Cov	er	That Are OBL, FACW, o	or FAC:	(A/B)
Sapling/Shrub Stratum (Plot size: 15')		rotal oo		Prevalence Index work	sheet:	
1. Shumard's oak (Quercus shumardii)		Yes	FACW	Total % Cover of:		
2. Post oak (Quercus stellata)		Yes	FACU	OBL species		
3. Slippery elm (Ulmus rubra)		No No	FAC	FACW species		
4. Coral-berry (Symphoricarpos orbiculatus)	$-\frac{5}{2}$	No No	FACU	FAC species		
5. Eastern red-cedar (Juniperus virginiana)			FACU	FACU species		
Herb Stratum (Plot size:)		= Total Cov	er	UPL species		
1 Ash-leaf elm (Ace negundo)	45	Yes	FAC	Column Totals:	(A)	(B)
Eastern poison ivy (Toxicodendron radicans)	30	Yes	FAC	Prevalence Index	= B/A =	
Chinese privet (Ligustrum sinense)		No	FACU	Hydrophytic Vegetatio	n Indicators:	
4. Virginia-creeper (Parthenocissus quinquefolia)	5	No	FACU	1 - Rapid Test for H	lydrophytic Veg	jetation
5.				2 - Dominance Test	t is >50%	
6.				3 - Prevalence Inde	x is ≤3.0 ¹	
7				4 - Morphological A	daptations ¹ (Pr	ovide supporting
8				data in Remarks	-	
9				Problematic Hydrop	onytic vegetation	on (Explain)
10				¹ Indicators of hydric soil	and watland b	udralagu muat
30'	90	= Total Cov	er	be present, unless distu		
Woody Vine Stratum (Plot size:)	2	Yes	FACU			
				Hydrophytic Vegetation		
2		= Total Cov			s No	_ <u>×</u> _
Remarks: (Include photo numbers here or on a separate		- Total COV		1		
	,					

Profile Desc	cription: (Describ	e to the depth	needed to docu	ment the i	ndicator o	or confirm	the absence	of indicators.)
Depth	Matrix			x Features		12	T	Demode
(inches)	Color (moist) 10YR 3/2		Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks
1-5	IUTR 3/2		-				clay loam	
¹ Type: C=Ce	oncentration, D=D	epletion, RM=F	Reduced Matrix, M	S=Masked	Sand Gra	ains.	² Location:	: PL=Pore Lining, M=Matrix.
Hydric Soil			•					for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed Ma	trix (S4)		Coast I	Prairie Redox (A16)
Histic Ep	oipedon (A2)		Sandy	Redox (S5))		Dark S	urface (S7)
	istic (A3)		Strippe	d Matrix (S	6)		Iron-Ma	anganese Masses (F12)
Hydroge	en Sulfide (A4)			Mucky Min			Very S	hallow Dark Surface (TF12)
_	d Layers (A5)			Gleyed Ma			Other (Explain in Remarks)
_	ıck (A10)			d Matrix (F	,			
	d Below Dark Surfa	ace (A11)	_	Dark Surfa	, ,		31	of hardwards dis association and
_	ark Surface (A12) ⁄lucky Mineral (S1)			d Dark Su Depressior	, ,			of hydrophytic vegetation and hydrology must be present,
	icky Peat or Peat (Redux	Depression	15 (1-0)			disturbed or problematic.
	Layer (if observed						Timess	distarbed of problematic.
Type:	rock layer	-,-						
Depth (in	ches). 5"						Hydric Soil	Present? Yes No _X
	Ciles).							
Remarks:								
No positive	indication of hydri	c soils was ob	servea.					
HYDROLO	GY							
-	drology Indicator							
Primary India	cators (minimum o	fone is require	d; check all that a	oply)			<u>Seconda</u>	ry Indicators (minimum of two required)
Surface	Water (A1)		X Water-Sta	ined Leave	es (B9)		Surfa	ace Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic Fa	auna (B13))		Drai	nage Patterns (B10)
Saturation	on (A3)		True Aqua	atic Plants	(B14)			Season Water Table (C2)
Water M	larks (B1)		Hydrogen	Sulfide Oc	dor (C1)		Cray	fish Burrows (C8)
Sedimer	nt Deposits (B2)		Oxidized I	Rhizosphei	res on Livi	ing Roots	(C3) Satu	ration Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)		Presence	of Reduce	d Iron (C4	!)	Stun	ited or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduction	on in Tilled	d Soils (C6	i) X Geo	morphic Position (D2)
Iron Dep	oosits (B5)		Thin Muck	Surface (C7)		FAC	-Neutral Test (D5)
Inundati	on Visible on Aeria	l Imagery (B7)	Gauge or	Well Data	(D9)			
Sparsely	y Vegetated Conca	ve Surface (B	B) Other (Ex	plain in Re	marks)			
Field Obser	vations:							
Surface Wat	er Present?		o <u> </u>			_		
Water Table	Present?	Yes No	o _X_ Depth (in	ches):	> 5"	_		
Saturation P	resent?	Yes No	o X Depth (in	ches):	> 5"	_ Wetla	and Hydrology	/ Present? Yes No
	oillary fringe)							
Describe Re	corded Data (strea	m gauge, mon	itoring well, aerial	photos, pre	evious ins	pections),	if available:	
Remarks:								
A positive ir	ndication of wetlar	id hydrology w	as observed (at le	east one pi	rimary ind	licator).		

Project/Site:	C	ity/County:	Tulsa		Sampling Date:	6/11/2019
Applicant/Owner: The Oklahoma Department of Transp				State: OK		
Investigator(s): Megan Philips-Schaap and Lacee Stan	ley		mehin Pa	nge: Sec 35, T19N, R12		
Landform (hillslope, terrace, etc.): forested hillslope				(concave, convex, none):		
	L			(concave, convex, none).		3
Soil Map Unit Name: 48 - Radley silt loam, 0 to 1 perce	nt frequently f	ong: looded				
•				NWI classifica		
Are climatic / hydrologic conditions on the site typical for						
Are Vegetation, Soil, or Hydrology			Are "	'Normal Circumstances" p	resent? Yes _	X No
Are Vegetation, Soil, or Hydrology			,	eeded, explain any answer	,	
SUMMARY OF FINDINGS – Attach site ma		sampling	point l	ocations, transects	, important f	eatures, etc.
Hydrophytic Vegetation Present? Yes X		le the	Sampled	Area		
Hydric Soil Present? Yes Wetland Hydrology Present? Yes			n a Wetlar		NoX	
Remarks:	NO					
This point was determined not to be within a wetland	due to the lack	c of hydric	soils and v	wetland hydrology.		
VEGETATION - Use scientific names of plant	ts.					
30'		Dominant		Dominance Test works	sheet:	
Tree Stratum (Plot size:) 1 Common hackberry (Celtis occidentalis)	<u>% Cover</u> 40	Yes	Status FAC	Number of Dominant Sp		5
American elm (Ulmus americana)	$-\frac{40}{40}$	Yes	FACW	That Are OBL, FACW, o)r FAC:	(A)
3.				Total Number of Domina Species Across All Strat		7 (B)
4				Percent of Dominant Sp	necies _	
5				That Are OBL, FACW, o		1% (A/B)
Sapling/Shrub Stratum (Plot size:)	=	Total Cove	er	Prevalence Index work	rsheet:	
1. Chinese privet (Ligustrum sinense)	40	Yes	FACU	Total % Cover of:		olv bv:
2 Common hackberry (Celtis occidentalis)		Yes	FAC	OBL species		
3				FACW species		I
4.				FAC species	x 3 =	
5				FACU species	x 4 =	
5'	=	Total Cove	er	UPL species	x 5 =	
Herb Stratum (Plot size:) Virginia-creeper (Parthenocissus quinquefolia)	20	Yes	FACII	Column Totals:	(A)	(B)
Virginia wild rye (Elymus virginicus)	$-\frac{20}{10}$	Yes	FACW	Prevalence Index	= B/A =	
3.				Hydrophytic Vegetatio		
4.				1 - Rapid Test for H		etation
5				X 2 - Dominance Test		
6				3 - Prevalence Inde	x is ≤3.0 ¹	
7				4 - Morphological A data in Remarks	daptations ¹ (Pro or on a separat	ovide supporting
8				Problematic Hydrop	-	· · · · · · · · · · · · · · · · · · ·
9					,	(
10	30 =			¹ Indicators of hydric soil	and wetland hy	drology must
Woody Vine Stratum (Plot size:)	=	Total Cove	er	be present, unless distu	rbed or problem	atic.
1. River-bank grape (Vitis riparia)	5	Yes	FACW	Hydrophytic		
2.				Vegetation	V	
	5=	Total Cov	er	Present? Yes	s_X_ No_	
Remarks: (Include photo numbers here or on a separat	,					
A positive indication of hydrophytic vegetation was ob	oserved (>50%	of domina	nt species	indexed as OBL, FACW	, or FAC).	
I						ı

Depth	ription: (Describe Matrix			x Features	3			•
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
0-6	10YR 3/1	90	10YR 5/6	10		M	clay	
6-14	10YR 3/2	95	10YR 3/6	5	D	M	clay	
¹ Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, M	S=Masked	Sand Gra	ains.	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil								Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy 0	Gleyed Ma	trix (S4)		Coast Pra	irie Redox (A16)
Histic Ep	pipedon (A2)		Sandy F	Redox (S5))		Dark Surfa	ace (S7)
Black Hi				d Matrix (S	,			anese Masses (F12)
	n Sulfide (A4)			Mucky Min				ow Dark Surface (TF12)
_	d Layers (A5)			Gleyed Ma			Other (Exp	olain in Remarks)
_	ick (A10) d Below Dark Surfac	o (A11)		d Matrix (F Dark Surfa	,			
	ark Surface (A12)	e (ATT)	_	d Dark Suna	٠,		3Indicators of I	hydrophytic vegetation and
	fucky Mineral (S1)			Depression	, ,			drology must be present,
	icky Peat or Peat (S	3)			()			turbed or problematic.
	Layer (if observed)							•
Туре:								~
Depth (inc	ches):						Hydric Soil Pre	esent? Yes No _X
Remarks:								
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	cators (minimum of c	ne is requir	red; check all that ap	oply)			Secondary I	ndicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9)		Surface	Soil Cracks (B6)
High Wa	iter Table (A2)		Aquatic Fa	auna (B13)			Drainag	e Patterns (B10)
Saturation	, ,		True Aqua	itic Plants	(B14)			ason Water Table (C2)
Water M	arks (B1)		Hydrogen	Sulfide Od	lor (C1)		Crayfish	Burrows (C8)
Sedimer	nt Deposits (B2)		Oxidized F	-		_	(C3) Saturati	on Visible on Aerial Imagery (C9)
	oosits (B3)		Presence		,	,		or Stressed Plants (D1)
	at or Crust (B4)		Recent Iro			d Soils (C6	_	rphic Position (D2)
	oosits (B5)		Thin Muck	,	,		X FAC-Ne	eutral Test (D5)
_	on Visible on Aerial		<i>-</i>					
<u> </u>	Vegetated Concav	e Surface (I	38) Other (Exp	olain in Rei	marks)			
Field Obser			Y D	-h \·				
Surface Water			No X Depth (in		> 14"	-		
Water Table			No X Depth (in		> 14"	-		
Saturation Projection (includes cap	resent? Y pillary fringe)	es I	No X Depth (in	cnes):	· 14	_ Wetia	and Hydrology Pr	resent? Yes No _X
		gauge, mo	nitoring well, aerial	photos, pre	evious ins	pections),	if available:	
	corded Data (stream	33-,						
Describe Red	corded Data (stream							
Describe Red	`							
Describe Red	indication of wetlan							
Describe Red	`							

Project/Site:JP 32728(04) - I-44/US-75		(City/County	, Tulsa		Sampling Date:	6/11/2019
Applicant/Owner: The Oklahoma Departmen	of Transpor	rtation (ODC	OT)	·	State: OK		
Investigator(s): Megan Philips-Schaap and L				ownship Ra			
Landform (hillslope, terrace, etc.): depression					(concave, convex, none):		
Soil Map Unit Name: 8 - Choska-Severn-Urba	an land com	' plex, 0 to 1	percent slo	pes, rarely	flooded NWI classific	ration: N/A	
Are climatic / hydrologic conditions on the site							
Are Vegetation, Soil, or Hydrole					'Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrole					eeded, explain any answe		
SUMMARY OF FINDINGS – Attach						,	eatures, etc.
Hydrophytic Vegetation Present? Yes	XN	lo					
Hydric Soil Present? Yes		lo	ls th	ne Sampled			
Wetland Hydrology Present? Yes	N	lo	with	nin a Wetlar	nd? Yes X	No	-
Remarks: This point was determined to be within a w VEGETATION – Use scientific names			nce of all 3	wetland cr	iteria (Wetland 3).		
Table 1 and	or planto	Absolute	Dominant	Indicator	Dominance Test work	sheet	
Tree Stratum (Plot size:)		% Cover			Number of Dominant Sp		
1. None observed					That Are OBL, FACW,		(A)
2					Total Number of Domin	ant	
3					Species Across All Stra		(B)
4					Percent of Dominant Sp	oecies	
5					That Are OBL, FACW,	or FAC:	(A/B)
Sapling/Shrub Stratum (Plot size:)		= Total Co	ver	Prevalence Index wor	ksheet:	
4 None observed					Total % Cover of:	Multip	ly by:
2.					OBL species	x 1 =	
3.					FACW species	x 2 =	
4					FAC species	x 3 =	
5					FACU species	x 4 =	
5'			= Total Co	ver	UPL species	x 5 =	
Herb Stratum (Plot size:		25	Yes	OBL	Column Totals:	(A)	(B)
Swamp smartweed (Persicaria hydropip	eroides)	- <u>35</u> 15	Yes	OBL	Prevalence Index	= R/A =	
Oklahoma sedge (Carex oklahomensis)	5/0/400)	10	No No	OBL	Hydrophytic Vegetation		
					X 1 - Rapid Test for H		tation
4 5					2 - Dominance Tes		
6					3 - Prevalence Inde		
7					4 - Morphological A	Adaptations ¹ (Prov	
8					data in Remarks	s or on a separate	e sheet)
9					Problematic Hydro	ohytic Vegetation	(Explain)
10.							
			= Total Co	ver	¹ Indicators of hydric soi be present, unless distu		
Woody Vine Stratum (Plot size:)				bo present, unless dist		
1. None observed					Hydrophytic		
2					Vegetation Yes	s_X_ No_	
Demontos (Ingludo photo purchase have a	0.000		= Total Co	ver			
Remarks: (Include photo numbers here or or A positive indication of hydrophytic vegetat		,	d Test for	Hydrophytic	vegetation).		

Profile Description: (De	scribe to the dep	th needed to docu	ment the	indicator	or confirn	n the absence o	f indicators.)	
	Matrix		x Feature					
<u>(inches)</u> <u>Color (m</u>		Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks	
0-5 2.5Y 3	3/1 100					_clay loam_		
5-18 10YR :	3/1 90	10YR 6/6	10	С	M/PL	clay loam		
1Tune: C=Concentration	D=Depletion PM		C=Maaka	d Sand Or		2l continu	DI = Doro Liping M=Motriy	
Type: C=Concentration, Hydric Soil Indicators:	D-Depletion, Rivi-	-Reduced Matrix, M	3-Maske	u Sanu Gi	airis.		PL=Pore Lining, M=Matrix. or Problematic Hydric Soils	3.
Histosol (A1)		Sandy	Gleyed Ma	atriv (SA)			rairie Redox (A16)	•
Histic Epipedon (A2)			Redox (S			_	rface (S7)	
Black Histic (A3)			d Matrix (nganese Masses (F12)	
Hydrogen Sulfide (A4	1)			neral (F1)		_	allow Dark Surface (TF12)	
Stratified Layers (A5)	,		Gleyed M				Explain in Remarks)	
2 cm Muck (A10)			ed Matrix (,	
Depleted Below Dark	Surface (A11)	Redox	Dark Surfa	ace (F6)				
Thick Dark Surface (A	,			urface (F7)		of hydrophytic vegetation and	
Sandy Mucky Minera	` '	X Redox	Depression	ns (F8)			hydrology must be present,	
5 cm Mucky Peat or I						unless d	listurbed or problematic.	
Restrictive Layer (if obs	served):							
Туре:						Hydric Soil F	Present? Yes X No	
Depth (inches):						injune com i	1030III. 103 NO	
HYDROLOGY								
Wetland Hydrology Indi	cators:							
Primary Indicators (minim	um of one is requi	red; check all that a	pply)			Secondar	y Indicators (minimum of two	required)
X Surface Water (A1)		Water-Sta	ined Leav	res (B9)		Surfa	ce Soil Cracks (B6)	
High Water Table (A2	2)	Aquatic F	auna (B13	3)		Drain	age Patterns (B10)	
X Saturation (A3)		True Aqua	atic Plants	(B14)		Dry-S	eason Water Table (C2)	
Water Marks (B1)		Hydrogen	Sulfide O	dor (C1)		Crayf	ish Burrows (C8)	
Sediment Deposits (F	32)	Oxidized	Rhizosphe	eres on Liv	ing Roots	(C3) Satur	ation Visible on Aerial Imager	y (C9)
Drift Deposits (B3)		Presence	of Reduce	ed Iron (C	4)	Stunt	ed or Stressed Plants (D1)	
X Algal Mat or Crust (B	4)	Recent Iro	on Reduct	ion in Tille	d Soils (Ce		norphic Position (D2)	
Iron Deposits (B5)		Thin Mucl	k Surface	(C7)		× FAC-	Neutral Test (D5)	
Inundation Visible on	Aerial Imagery (B	7) Gauge or	Well Data	(D9)				
Sparsely Vegetated 0	Concave Surface (I	B8) Other (Ex	plain in Re	emarks)				
Field Observations:				0.0"				
Surface Water Present?	Yes X	No Depth (in	iches):	2-3"	_			
Water Table Present?	Yes	No X Depth (in	iches):	> 18"	_			
Saturation Present? (includes capillary fringe) Describe Recorded Data		No Depth (in		surface revious ins			Present? Yes X No	·
Remarks: A positive indication of v	vetland hydrology	was observed (at l	east one p	orimary ind	dicator).			
ĺ								

Project/Site:	(City/Co	untv.	Tulsa		Sampling Date	6/11/2019
Applicant/Owner: The Oklahoma Department of Transpo	ortation (ODC	OT)	unty.		State: OK		
Investigator(s): Megan Philips-Schaap and Lacee Stanle			n. Tov	vnship. Rai			
Landform (hillslope, terrace, etc.): open ROW					(concave, convex, none):		
Slope (%): 0-1% Lat: 36.089271							3
Soil Map Unit Name: 8 - Choska-Severn-Urban land con	nplex, 0 to 1	percer	nt slo	pes, rarely	flooded NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for th							
Are Vegetation, Soil, or Hydrology					Normal Circumstances" p		× No
Are Vegetation, Soil, or Hydrology					eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map				,		,	
Hydrophytic Vegetation Present? Yes	No X						
Hydric Soil Present? Yes X	No		ls the	e Sampled			
Wetland Hydrology Present? Yes I	NoX		withi	n a Wetlar	nd? Yes	No <u>X</u>	_
Remarks: This point was determined not to be within a wetland of the vertical vertic		ck of hy	ydrop	hytic vege	tation and wetland hydro	ology.	
TESTIATION — Ose selections frames of plants	Absolute	Domi	nant	Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size:) 1. None observed	% Cover	Speci	ies?		Number of Dominant Sp That Are OBL, FACW, of	pecies	0 (A)
3			_		Total Number of Domin Species Across All Stra		2 (B)
4. 5.			_		Percent of Dominant Sp That Are OBL, FACW, o		0% (A/B)
Sanling/Shruh Stratum (Plot size:		= Tota	I Cov	er	Prevalence Index work	ksheet:	
Sapling/Shrub Stratum (Plot size:) 1. None observed					Total % Cover of:		iply by:
2.			_		OBL species		
3.					FACW species		
4					FAC species	x 3 =	
5					FACU species	x 4 =	
5'		= Tota	l Cov	er	UPL species	x 5 =	
Herb Stratum (Plot size:)	0.5	V	_	EA 011	Column Totals:	(A)	(B)
Tall false rye grass (Schedonorus arundinaceus) Bermuda grass (Cynodon dactylon)		Ye:		FACU FACU	Prevalence Index	- P/A -	
Johnson grass (Sorghum halepense)	- - 30 - 10	—No		FACU	Hydrophytic Vegetation		
			_		1 - Rapid Test for H		etation
4					2 - Dominance Tes		Journal
5					3 - Prevalence Inde		
6					4 - Morphological A		ovide supporting
8.					data in Remarks	s or on a separa	ate sheet)
9.					Problematic Hydrop	phytic Vegetatio	on¹ (Explain)
10							
Woody Vine Stratum (Plot size:)	105	= Tota	l Cov	er	¹ Indicators of hydric soil be present, unless distu		
1. None observed					Hydrophytic		
2					Vegetation Present? Yes	s No	×
		= Tota	l Cov	er	riesellir fe	- NO	
Remarks: (Include photo numbers here or on a separate	sheet.)						

(inches)	Matrix Color (moist)	 _	Redo		Type ¹	Loc²	Toyturo	Domarka
0-4	Color (moist) 10YR 4/2	100	Color (moist)	<u> </u>		LOC	<u>Texture</u> clay loam	Remarks
			- FVD F/0					
<u>4-18</u>	10YR 4/2		5YR 5/8				clay loam	
1 _{Type:} C=C	oncentration, D=Dep	lotion DM-I	Paduaad Matrix M	S=Maskad	Sand Cr		² l coation:	PL=Pore Lining, M=Matrix.
Hydric Soil		DIELION, KIVI-I	reduced Matrix, Mi	J-Wasket	Sand Gra			for Problematic Hydric Soils ³ :
Histosol			Sandy (Gleyed Ma	trix (S4)			Prairie Redox (A16)
_	pipedon (A2)			Redox (S5			_	urface (S7)
Black H	istic (A3)		Stripped	d Matrix (S	66)		Iron-Ma	nganese Masses (F12)
	en Sulfide (A4)			Mucky Mir				nallow Dark Surface (TF12)
	d Layers (A5)			Gleyed Ma			Other (B	Explain in Remarks)
_	uck (A10) d Below Dark Surfac	o (A11)	X Deplete	d Matrix (I Dark Surfa				
	ark Surface (A12)	e (ATT)	_	d Dark Suna			3Indicators	of hydrophytic vegetation and
	Mucky Mineral (S1)			Depression	, ,			hydrology must be present,
	ucky Peat or Peat (S	3)	_	·	` ,			disturbed or problematic.
Restrictive	Layer (if observed)	:						
Туре:			_				I lived min Control	Present? Yes X No No
Depth (in	ches):		_				Hydric Soil F	Present? Yes No
Remarks:								
Wetland Hy	drology Indicators:							
Wetland Hy	drology Indicators: cators (minimum of o		•					y Indicators (minimum of two required)
Wetland Hy Primary India Surface	drology Indicators: cators (minimum of o Water (A1)		Water-Sta	ined Leav	, ,		Surfa	ice Soil Cracks (B6)
Wetland Hy Primary India Surface High Wa	drology Indicators: cators (minimum of o Water (A1) ater Table (A2)		Water-Sta Aquatic Fa	ined Leav)		Surfa	ace Soil Cracks (B6) age Patterns (B10)
Wetland Hy Primary India Surface High Wa Saturation	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3)		Water-Sta Aquatic Fa True Aqua	ined Leave auna (B13) atic Plants) (B14)		Surfa Drain Dry-S	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2)
Wetland Hy Primary India Surface High Wa Saturatia Water M	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) flarks (B1)		Water-Sta Aquatic Fa True Aqua	ined Leave auna (B13 atic Plants Sulfide Oc) (B14) dor (C1)	ing Roots	Surfa Drain Dry-S	ace Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)		Water-Sta Aquatic Fa True Aqua	ined Leave auna (B13 atic Plants Sulfide Oc Rhizosphe) (B14) dor (C1) res on Livi	-	Surfa Surfa Drain Pry-S Crayt (C3) Satur	ice Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Der	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) flarks (B1)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	ined Leave auna (B13 atic Plants Sulfide Oc Rhizosphe of Reduce) (B14) dor (C1) res on Liv d Iron (C4)	Surfa Surfa Drain Dry-S Crayi Satur	ace Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence	ined Leave auna (B13) atic Plants Sulfide Oo Rhizosphe of Reduce on Reducti	(B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled)	Surfa Drain Dry-S Crayl (C3) Satur Stunt S) Geor	ice Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	one is require	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro	ined Leave auna (B13) atic Plants Sulfide Oc Rhizosphe of Reduce in Reducti Surface ((B14) dor (C1) res on Liv d Iron (C4 on in Tilled)	Surfa Drain Dry-S Crayl (C3) Satur Stunt S) Geor	ace Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	one is require	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	ined Leave auna (B13) atic Plants Sulfide Od Rhizosphe of Reduce on Reducti Surface ((B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9))	Surfa Drain Dry-S Crayl (C3) Satur Stunt S) Geor	ace Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati	drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concav	one is require	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	ined Leave auna (B13) atic Plants Sulfide Od Rhizosphe of Reduce on Reducti Surface ((B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9))	Surfa Drain Dry-S Crayl (C3) Satur Stunt S) Geor	ace Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati	drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concavervations: ater Present?	Imagery (B7) e Surface (B	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck) Gauge or 1 8) Other (Exp	ined Leave auna (B13 atic Plants Sulfide Oc Rhizosphe of Reduce in Reducti Surface (Well Data blain in Re	(B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9) marks))	Surfa Drain Dry-S Crayl (C3) Satur Stunt S) Geor	ace Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Sparsely	drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concaverations: ater Present?	Imagery (B7) e Surface (B es N	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence Recent Iro Thin Muck o Gauge or 1 0 X Depth (into	ined Leave auna (B13) stic Plants Sulfide Oo Rhizosphe of Reduce on Reducti Surface (Well Data blain in Re ches): ches):	(B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9) marks)	d Soils (C6	Surfa Surfa Drain Dry-S Crayi (C3) Satur Stunt Geor FAC-	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) hed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Inundati Sparsely Field Obser Surface Wat Water Table Saturation P	drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavery vations: ter Present?	Imagery (B7) e Surface (B es N	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck) Gauge or 1 8) Other (Exp	ined Leave auna (B13) stic Plants Sulfide Oo Rhizosphe of Reduce on Reducti Surface (Well Data blain in Re ches): ches):	(B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9) marks)	d Soils (C6	Surfa Surfa Drain Dry-S Crayi (C3) Satur Stunt Geor FAC-	ace Soil Cracks (B6) lage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) led or Stressed Plants (D1) morphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concaverations: ater Present?	Imagery (B7) e Surface (B 'es N 'es N	Water-Sta	ined Leave auna (B13) atic Plants Sulfide Oc Rhizosphe of Reduce on Reducti Surface (Well Data blain in Re ches): ches): ches):) (B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled (C7) (D9) marks) >18" >18"	d Soils (C6	Surfa Surfa Drain Dry-S Crayi (C3) Satur Stunt FAC-	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) hed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Inundati Sparsely Field Obser Surface Water Table Saturation P (includes car	drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavivations: der Present?	Imagery (B7) e Surface (B 'es N 'es N	Water-Sta	ined Leave auna (B13) atic Plants Sulfide Oc Rhizosphe of Reduce on Reducti Surface (Well Data blain in Re ches): ches): ches):) (B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled (C7) (D9) marks) >18" >18"	d Soils (C6	Surfa Surfa Drain Pry-S Crayi (C3) Satur Stunt FAC-	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) hed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavivations: der Present?	Imagery (B7) e Surface (B 'es N 'es N	Water-Sta	ined Leave auna (B13) atic Plants Sulfide Oc Rhizosphe of Reduce on Reducti Surface (Well Data blain in Re ches): ches): ches):) (B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled (C7) (D9) marks) >18" >18"	d Soils (C6	Surfa Surfa Drain Pry-S Crayi (C3) Satur Stunt FAC-	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) hed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes cap Describe Re	drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavivations: der Present?	Imagery (B7) e Surface (B /es N /es N res N	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence Recent Iro Thin Muck Gauge or Other (Exp Depth (indo X De	ined Leave auna (B13) atic Plants Sulfide Oc Rhizosphe of Reduce on Reducti Surface (Well Data blain in Re ches): ches): ches):) (B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled (C7) (D9) marks) >18" >18"	d Soils (C6	Surfa Surfa Drain Pry-S Crayi (C3) Satur Stunt FAC-	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) hed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes cap Describe Re	drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concaverations: ater Present? Present?	Imagery (B7) e Surface (B /es N /es N res N	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence Recent Iro Thin Muck Gauge or Other (Exp Depth (indo X De	ined Leave auna (B13) atic Plants Sulfide Oc Rhizosphe of Reduce on Reducti Surface (Well Data blain in Re ches): ches): ches):) (B14) (B14) dor (C1) res on Liv d Iron (C4 on in Tilled (C7) (D9) marks) >18" >18"	d Soils (C6	Surfa Surfa Drain Pry-S Crayi (C3) Satur Stunt FAC-	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) hed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)

Project/Site:	(City/County	: Tulsa Co	unty	Sampling Date:	9/30/2020
Applicant/Owner: The Oklahoma Department of Transport	ation (ODC	OT)		State: OK	Sampling Point	DP 10
Magan Philips-Schaan		Section To	wnshin Ra	S25-T19N-R12E	Camping Form	
Landform (hillslope, terrace, etc.): tloodplain terrace				(concave, convex, none):	concave	
Slope (%): 45-50% Lat: 36.090130				(concave, convex, none).		3
Soil Map Unit Name: W - Water				NWI classific	R2USC	
Are climatic / hydrologic conditions on the site typical for this	time of year	r2 Vos	X No	/If no evaluin in B	ation.	
				'Normal Circumstances" p		× No
Are Vegetation, Soil, or Hydrology si	-					NO
Are Vegetation, Soil, or Hydrology na SUMMARY OF FINDINGS – Attach site map s			-	eeded, explain any answer	•	eatures, etc.
Hydrophytic Vegetation Present? Yes X No)					
Hydric Soil Present? Yes X No		ls th	e Sampled			
Wetland Hydrology Present? Yes X No		with	in a Wetlar	nd? Yes X	No	_
Remarks: This point was determined to be within a wetland due to Wetland 4 - PSS VEGETATION – Use scientific names of plants.	the preser	nce of all 3	wetland cr	iteria.		
30'	Absolute	Dominant	Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size:) Black willow (Salix nigra)	% Cover 5	Species? Yes	Status OBL	Number of Dominant Sp That Are OBL, FACW, o		5 (A)
2.				That Are OBL, FACW, C) FAO	(A)
3.				Total Number of Domina Species Across All Stra		5 (B)
4				Percent of Dominant Sp	necies	
5	5			That Are OBL, FACW, o		00% (A/B)
Sapling/Shrub Stratum (Plot size: 15')		= Total Cov	/er	Prevalence Index work	ksheet:	
1. Black willow (Salix nigra)	30	Yes	OBL	Total % Cover of:		oly by:
2				OBL species	x 1 =	
3				FACW species	x 2 =	
4				FAC species		
5	30			FACU species		
Herb Stratum (Plot size:5'		= Total Cov	/er	UPL species		
1. Plowman's-wort (Pluchea camphorata)	15	Yes	FACW	Column Totals:	(A)	(B)
Swamp smartweed (Persicaria hydropiperoides)	15	Yes	OBL	Prevalence Index	= B/A =	
Rough cockleburr (Xanthium strumarium)	15	Yes	FAC	Hydrophytic Vegetation	n Indicators:	
Late-flowering thoroughwort (Eupatorium serotinum)	5	No	FAC	1 - Rapid Test for H		etation
5. Johnson grass (Sorghum halepense)	2	No	FACU	X 2 - Dominance Tes		
6				3 - Prevalence Inde		
7				4 - Morphological A data in Remarks		
8				Problematic Hydrop	-	. '
9					,	(,
10	E2			¹ Indicators of hydric soil		
Woody Vine Stratum (Plot size:)		= Total Cov	/er	be present, unless distu	rbed or problem	atic.
1. None observed				Hydrophytic		
2				Vegetation Present? Yes	s_X_ No_	
		= Total Cov	/er	Tesent: Tes	, NO_	
Remarks: (Include photo numbers here or on a separate since A positive indication of hydrophytic vegetation was observed.)	•	of domina	ant species	indexed as OBL, FACW	, or FAC).	

Sampling Point: DP 10

Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ² _	Texture	Remarks
0-18	2.5Y 7/3	100	-	-	-		sand	small light and dark orange mottles
¹Type: C=C	oncentration, D=Dep	letion RM=Re	duced Matrix M	S=Masker	Sand Gra	ains	² I ocation	: PL=Pore Lining, M=Matrix.
Hydric Soil			adout matrix, m	o maonoc	a ouria ori			for Problematic Hydric Soils ³ :
Histosol			Sandy	Gleyed Ma	atriv (S4)			Prairie Redox (A16)
ı —	pipedon (A2)			Redox (S5			_	Surface (S7)
. —	istic (A3)			d Matrix (S			_	anganese Masses (F12)
ı —	en Sulfide (A4)			Mucky Mir	,		_	Shallow Dark Surface (TF12)
	d Layers (A5)			Gleyed Ma				(Explain in Remarks)
ı —	uck (A10)			ed Matrix ((2Aprail III Tomaille)
ı —	d Below Dark Surfac	e (A11)		Dark Surfa	,			
. —	ark Surface (A12)	- (,	_		ırface (F7)		3Indicators	s of hydrophytic vegetation and
l —	Mucky Mineral (S1)			Depressio	, ,			d hydrology must be present,
	ucky Peat or Peat (S	3)	_					disturbed or problematic.
	Layer (if observed):	-						•
Type:	,							
Depth (in	chee).		-				Hydric Soil	Present? Yes X No No
	Cites).							
Remarks:								
	blematic Hydric Soil							
								I concentrate water (i.e. concave pils (NTCHS) hydric soils indicators,
								ediments within Floodplains and
	Ponded Soils).	, a		о р. од.о		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(+
HYDROLO	C.V							
1	drology Indicators:							
Primary Indi	cators (minimum of c	ne is required;	check all that ap	oply)				ary Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leav	es (B9)		Surf	face Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic Fa	auna (B13)		Drai	inage Patterns (B10)
Saturati	on (A3)		True Aqua	atic Plants	(B14)		Dry-	-Season Water Table (C2)
Water M	larks (B1)		Hydrogen	Sulfide O	dor (C1)		Cra	yfish Burrows (C8)
Sedime	nt Deposits (B2)		Oxidized I	Rhizosphe	res on Liv	ing Roots ((C3) Sati	uration Visible on Aerial Imagery (C9)
	posits (B3)				ed Iron (C4			nted or Stressed Plants (D1)
ı —	at or Crust (B4)		_		•	d Soils (C6		omorphic Position (D2)
ı —	posits (B5)		Thin Muck			,		C-Neutral Test (D5)
ı —	on Visible on Aerial	magery (B7)	Gauge or					
—	y Vegetated Concav		_ `		. ,			
Field Obser	,	c duriace (Bo)		piaiii iii i te	iliaiks)			
			Y 5 " "					
Surface Wat			X_ Depth (in		> 18"	-		
Water Table	Present? Y	es No	X_ Depth (in	ches):		_		
Saturation P		es No	X_ Depth (in	ches):	> 18"	_ Wetla	and Hydrolog	y Present? YesX No
(includes ca			ring wall	nhatar :	oulerre !-	nonting - \	if available:	
Describe Re	corded Data (stream	gauge, monito	oring well, aerial	pnotos, pr	evious ins	pections),	it available:	
Remarks:								
A positive in	ndication of wetland	hydrology was	s observed (at le	east two s	econdary	indicators)).	
1								

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Project/Site:I-44/US-75 Interchange (Arkansas Riv	ver) City/Cou	nty: Tulsa County	Sampling Date: 9/30/2020
The Oklahoma Department of Tra	ansportation (ODOT)	State: OK	Sampling Point: DP 11
Investigator(s): Megan Philips-Schaap	Section	Township, Range: S25-T19N-R12	campang r onta E
Landform (hillslope, terrace, etc.): tloodplain terrace		_ Local relief (concave, convex, no	convex
Slope (%): 15% Lat: 36.090074	Long: -9		Datum NAD83
Siope (%) Value Water	Long	ANA# -1	R2USC
Soil Map Unit Name: W - Water		NWI clas	sification:
Are climatic / hydrologic conditions on the site typical			
Are Vegetation, Soil, or Hydrology			es" present? Yes X No
Are Vegetation, Soil, or Hydrology	naturally problematic	? (If needed, explain any an	swers in Remarks.)
SUMMARY OF FINDINGS – Attach site	map showing sampl	ling point locations, transe	cts, important features, etc.
	NoX		
Hydric Soil Present? Yes	_ 110	the Sampled Area	No. Y
	No _X w	vithin a Wetland? Yes _	No <u>X</u>
Remarks:			
This point was determined not to be within a wetla	and due to the lack of all t	inree welland chieria.	
VEGETATION – Use scientific names of pl		ant Indicator Developmen Teatre	verilizable est
Tree Stratum (Plot size:)		ant Indicator Dominance Test was? Status	
None observed		That Are ORL 540	
2.			minant
3		Total Nullibel of Do	
4		- I	at Species
5			W, or FAC: (A/B)
Sanling/Shruh Stratum (Diet eize:	= Total 0	Cover Prevalence Index	worksheet:
Sapling/Shrub Stratum (Plot size:		Total % Cayor	of: Multiply by:
2			x 1 =
3.			x 2 =
4			x 3 =
5.			x 4 =
	= Total 0	Cover UPL species	x 5 =
Herb Stratum (Plot size:)		Column Totals:	(A) (B)
1. None observed		— — Broyalance In	ndex = B/A =
2			
3			for Hydrophytic Vegetation
4 5			
6			
7			cal Adaptations ¹ (Provide supporting
8		data in Rem	narks or on a separate sheet)
9.		Problematic Hy	drophytic Vegetation ¹ (Explain)
10			
	= Total 0		c soil and wetland hydrology must disturbed or problematic.
Woody Vine Stratum (Plot size:			
1		— Hydrophytic Vegetation	
2		Present?	Yes No _X_
Remarks: (Include photo numbers here or on a sep	= Total (20ver	
No vegetation is present at this data point.	arate smooth,		
No positive indication of hydrophytic vegetation w	as observed (≥50% of do	minant species indexed as FAC-	or drier).

Depth	cription: (Describe Matrix	to the depti		x Feature:		or commi	i tile absence o	i maicators.)
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	_Type ¹	Loc²	Texture	Remarks
0-18	2.5Y 7/3	100	-	-	_	_	sand	
				- —				
1			Deduced Metric M	- ———			21	DI - D I i-i M-M-t-i
Hydric Soil	oncentration, D=Dep	pletion, RIVI=	Reduced Matrix, Mi	5=Masked	Sand Gra	ains.		PL=Pore Lining, M=Matrix. or Problematic Hydric Soils ³ :
•			0 do 4	21	t-i (O.1)			
Histosol	. ,			Gleyed Ma			_	rairie Redox (A16)
	pipedon (A2)			Redox (S5				rface (S7)
_	istic (A3)			d Matrix (S				nganese Masses (F12)
	en Sulfide (A4)			Mucky Mir				allow Dark Surface (TF12)
_	d Layers (A5)			Gleyed Ma			Other (E	Explain in Remarks)
_	uck (A10)			d Matrix (I	,			
	d Below Dark Surfac	ce (A11)	_	Dark Surfa			2	
_	ark Surface (A12)				rface (F7)			of hydrophytic vegetation and
	Mucky Mineral (S1)		Redox I	Depression	ns (F8)			hydrology must be present,
	ucky Peat or Peat (S						unless d	disturbed or problematic.
Restrictive	Layer (if observed)	:						
Туре:							Under Call D	Present? Yes No _X_
Depth (in	ches):						Hydric Soil P	Present? Yes No _X
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicators:	:						
Primary Indi	cators (minimum of o	one is require	ed; check all that ap	ply)			Secondar	y Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9)		Surfa	ce Soil Cracks (B6)
_	ater Table (A2)		Aquatic Fa	auna (B13)		— Drain	age Patterns (B10)
Saturati	, ,		True Aqua					Season Water Table (C2)
	farks (B1)		Hydrogen					ish Burrows (C8)
	nt Deposits (B2)		Oxidized F			na Pooto		ation Visible on Aerial Imagery (C9)
						-	· / —	
	posits (B3)		Presence		•	,		ed or Stressed Plants (D1)
	at or Crust (B4)		Recent Iro			Solls (Cb	<i>'</i> —	norphic Position (D2)
	oosits (B5)		Thin Muck				FAC-	Neutral Test (D5)
_	on Visible on Aerial							
Sparsel	y Vegetated Concav	e Surface (B	8) Other (Exp	olain in Re	marks)			
Field Obser	vations:							
Surface Wat			loX_ Depth (in			_		
Water Table	Present?	/es N	lo _X_ Depth (in	ches):	> 18"			
Saturation P			lo X Depth (in		> 18"	- Wetl:	and Hydrology	Present? Yes No X
	pillary fringe)		bopur (iii	orioo)		_ '''	and riyarology	. resem: res no
Describe Re	corded Data (stream	n gauge, mor	nitoring well, aerial	photos, pr	evious ins	pections),	if available:	
Damerica								
Remarks:	indication of watter	nd hydrology	was observed					
i ino positive	indication of wetlar	ıu riyarology	was observed.					

Project/Site: I-44/US-75 Interchange (Ark	ansas River)	(City/County	r: Tulsa Co	Sampling Date:	9/30/2020	
Applicant/Owner: The Oklahoma Departm	ent of Transpo	rtation (ODC	OT)		OK	Sampling Point:	DP 12
Investigator(s): Megan Philips-Schaap			Section. To	wnship. Ra	S25-T19N-R12E	Camping Cont.	
Landform (hillslope, terrace, etc.): tloodplai	n terrace				(concave, convex, none):	concave	
Slope (%): 15-20% Lat: 36.090089						Datum: NAD83	
Soil Map Unit Name: W - Water					NWI classific	ation: R2USC	
Are climatic / hydrologic conditions on the s	ite typical for th	is time of yes	ar? Vec	X No	(If no explain in Pa	emarke)	
Are Vegetation, Soil, or Hyd					Normal Circumstances" p		< No
					eded, explain any answer		· NO
Are Vegetation, Soil, or Hyd SUMMARY OF FINDINGS - Attac				•		,	eatures, etc.
Hydrophytic Vegetation Present?	Yes X	lo					
Hydric Soil Present? Yes X No			ls th	e Sampled			
Wetland Hydrology Present?	Yes X	lo	with	in a Wetlar	nd? Yes X	No	_
Remarks:							
This point was determined to be within a Wetland 5 - PEM	a wetland due t	o the preser	nce of all 3	wetland cr	iteria.		
VEGETATION – Use scientific nan	nes of plants						
		Absolute			Dominance Test work	sheet:	
Tree Stratum (Plot size:	_ ′	% Cover			Number of Dominant Sp That Are OBL, FACW, of		(A)
2							(^,
3.					Total Number of Domina Species Across All Stra		(B)
4.							(5)
5.					Percent of Dominant Sp That Are OBL, FACW, of		(A/B)
	15'		= Total Co	ver			
Sapling/Shrub Stratum (Plot size:)	10	Yes	FACW	Prevalence Index work		.h. b.a
l ''-					Total % Cover of:		
2					OBL species		
3 4					FAC species		
5					FACU species		
		10	= Total Co	ver		x 5 =	
Herb Stratum (Plot size:5'	_)				Column Totals:		
1. Swamp smartweed (Persicaria hydror Plowman's-wort (Pluechea camphora	, ,	_ 15	Yes	OBL			
Fared redstem (Ammannia auriculata	•		Yes Yes	FACW	Prevalence Index		
Sht brist born ble godge (Phyrobogne	<u>, </u>	- 15 10	No No	OBL OBL	Hydrophytic Vegetatio		4-4:
Broad loof cat tail (Typha latifolia)	na comiculata)	$-\frac{10}{2}$	No No	OBL	X 1 - Rapid Test for H		tation
5					3 - Prevalence Inde		
6					4 - Morphological A		vide supporting
7					data in Remarks	or on a separate	e sheet)
8 9					Problematic Hydrop	ohytic Vegetation	¹ (Explain)
10.							
		E7	= Total Co	ver	¹ Indicators of hydric soil be present, unless distu		
Woody Vine Stratum (Plot size:)				be present, unless dista	inbed of problems	auc.
^{1.}					Hydrophytic		
2					Vegetation Present? Yes	s_X_ No_	
Demorker (Include that assume the second			= Total Co	ver			
Remarks: (Include photo numbers here or	•						
A positive indication of hydrophytic vege	tation was obs	erved (Rapi	d Test for I	Hydrophytic	: Vegetation).		

C	\sim	ı	ı	
J	v	ı	L	

Sampling Point: DP 12

(inches) 0-16	Matrix			x Feature			_	
0.46	Color (moist)		Color (moist)		Type ¹	Loc ²	Texture	Remarks
0-16	2.5Y 6/3	90	10YR 5/6	_ 10		M	sand	
								-
l ———								
¹ Type: C=Co	oncentration, D=Depl	etion, RM=F	Reduced Matrix, M	S=Masked	d Sand Gr	ains.	² Location: 1	PL=Pore Lining, M=Matrix.
Hydric Soil								r Problematic Hydric Soils³:
Histosol	(A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Pr	airie Redox (A16)
I —	pipedon (A2)			Redox (S5			_	face (S7)
Black Hi	istic (A3)		Strippe	d Matrix (S	36)		Iron-Man	ganese Masses (F12)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		Very Sha	allow Dark Surface (TF12)
Stratified	d Layers (A5)		Loamy	Gleyed M	atrix (F2)		X Other (Ex	xplain in Remarks)
2 cm Mu	uck (A10)		Deplete	ed Matrix (F3)			
Depleted	d Below Dark Surface	e (A11)	Redox	Dark Surfa	ace (F6)			
Thick Da	ark Surface (A12)		Deplete	ed Dark Su	ırface (F7)	³ Indicators of	f hydrophytic vegetation and
	lucky Mineral (S1)		Redox	Depressio	ns (F8)			nydrology must be present,
5 cm Mu	ucky Peat or Peat (S3	3)					unless di	sturbed or problematic.
Restrictive I	Layer (if observed):							
Туре:			_					×
Depth (inc	ches):						Hydric Soil Pi	resent? Yes X No
Remarks:								
	blamatia Iludria Caile	a a a eti a milia i	the Designal Con	alamant (m		٠.		
	blematic Hydric Soils						v to collect and co	oncentrate water (i.e. concave
								the definition of a hydric soil due to
	e problematic soils si							
ı		tuations (i.c	., Fluvial Sedimer	nts within	Floodplai	ns and Sea	asonally Ponded	Soils).
		tuations (i.e	., Fluvial Sedimer	nts within	Floodplai	ns and Sea	asonally Ponded	Soils).
HYDROLO	GY	tuations (i.e	., Fluvial Sedimer	nts within	Floodplai	ns and Sea	asonally Ponded	Soils).
HYDROLO		tuations (i.e	., Fluvial Sedimer	nts within	Floodplai	ns and Sea	asonally Ponded	Soils).
Wetland Hyd	drology Indicators:				Floodplai	ns and Sea		
Wetland Hyd	drology Indicators: cators (minimum of or		d; check all that a	oply)		ns and Sea	Secondary	Indicators (minimum of two required)
Wetland Hyd Primary Indic	drology Indicators: cators (minimum of or Water (A1)		d; check all that a	oply) iined Leav	res (B9)	ns and Sea	Secondary Surfac	Indicators (minimum of two required) se Soil Cracks (B6)
Wetland Hyd Primary India Surface High Wa	drology Indicators: cators (minimum of or Water (A1) ater Table (A2)		d; check all that al Water-Sta Aquatic Fa	oply) iined Leav auna (B13	res (B9)	ns and Sea	Secondary Surfac Draina	Indicators (minimum of two required) se Soil Cracks (B6) uge Patterns (B10)
Wetland Hyd Primary Indic Surface High Wa X Saturatio	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3)		d; check all that al Water-Sta Aquatic Fa	oply) nined Leav auna (B13 atic Plants	res (B9)	ns and Sea	Secondary Surfac Draina	Indicators (minimum of two required) se Soil Cracks (B6) sge Patterns (B10) season Water Table (C2)
Wetland Hyd Primary Indic Surface High Wa X Saturatio	drology Indicators: cators (minimum of or Water (A1) ater Table (A2)		d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen	oply) nined Leav auna (B13 atic Plants Sulfide O	res (B9) () (B14) dor (C1)		Secondary Surface Draina Dry-Se	Indicators (minimum of two required) be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) sh Burrows (C8)
Wetland Hyd Primary India Surface High Wa X Saturatio Water M Sedimer	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2)		d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen	oply) nined Leav auna (B13 atic Plants Sulfide O	res (B9) () (B14) dor (C1)	ns and Sea	Secondary Surface Draina Dry-Se	Indicators (minimum of two required) se Soil Cracks (B6) sge Patterns (B10) season Water Table (C2)
Wetland Hyd Primary India Surface High Wa X Saturatio Water M Sedimer	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1)		d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen	oply) nined Leav auna (B13 atic Plants Sulfide O Rhizosphe	res (B9) i) (B14) dor (C1) res on Liv	ving Roots	Secondary Surface Draina Dry-Se Crayfis (C3) Satura	Indicators (minimum of two required) be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) sh Burrows (C8)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2)		d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I	oply) nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce	res (B9) (B14) dor (C1) eres on Lived Iron (C	ving Roots	Secondary Surface Draina Dry-Se Crayfis (C3) Satura	Indicators (minimum of two required) te Soil Cracks (B6) tige Patterns (B10) teason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9)
Wetland Hyd Primary India Surface High Wa X Saturatia Water M Sedimer Drift Dep X Algal Ma	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3)		d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I	oply) nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti	res (B9) (B14) dor (C1) eres on Lived Iron (C	ving Roots 4)	Secondary	Indicators (minimum of two required) the Soil Cracks (B6) tige Patterns (B10) the ason Water Table (C2) the Burrows (C8) thion Visible on Aerial Imagery (C9) the or Stressed Plants (D1)
Wetland Hyd Primary Indic Surface High Wa X Saturatic Water M Sedimer Drift Dep X Algal Ma Iron Dep	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ne is require	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck	oply) ined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti	res (B9) (B14) dor (C1) eres on Lived Iron (C ion in Tille	ving Roots 4)	Secondary	Indicators (minimum of two required) the Soil Cracks (B6) tige Patterns (B10) the ason Water Table (C2) this Burrows (C8) this Visible on Aerial Imagery (C9) the or Stressed Plants (D1) torphic Position (D2)
Wetland Hyden Primary Indice Surface High Wax Saturation Water Modern Mo	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ne is require	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or	oply) auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti c Surface (res (B9) (B14) dor (C1) eres on Lived Iron (C don in Tille (C7) (D9)	ving Roots 4)	Secondary	Indicators (minimum of two required) the Soil Cracks (B6) tige Patterns (B10) the ason Water Table (C2) this Burrows (C8) this Visible on Aerial Imagery (C9) the or Stressed Plants (D1) torphic Position (D2)
Wetland Hyden Primary Indice Surface High Wax Saturation Water M Sedimer Drift Dep X Algal Mater Inundation Sparsely	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave	ne is require	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or	oply) auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti c Surface (res (B9) (B14) dor (C1) eres on Lived Iron (C don in Tille (C7) (D9)	ving Roots 4)	Secondary	Indicators (minimum of two required) the Soil Cracks (B6) tige Patterns (B10) the ason Water Table (C2) this Burrows (C8) this Visible on Aerial Imagery (C9) the or Stressed Plants (D1) torphic Position (D2)
Wetland Hyderimary Indice — Surface — High Wax X Saturation Water Mager Ma	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial In y Vegetated Concave vations:	magery (B7)	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Ira Thin Muck Gauge or Other (Ex	pply) nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti x Surface (Well Data	res (B9) (B14) dor (C1) eres on Lived Iron (C don in Tille (C7) (D9) emarks)	ving Roots 4)	Secondary	Indicators (minimum of two required) the Soil Cracks (B6) tige Patterns (B10) the ason Water Table (C2) this Burrows (C8) this Visible on Aerial Imagery (C9) the or Stressed Plants (D1) torphic Position (D2)
Wetland Hyden Primary India Surface High Wax Saturation Water May Sedimer Drift Dep X Algal May Iron Dep Inundation Sparsely Field Observation	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial In y Vegetated Concave vations: er Present?	magery (B7)	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Ird Thin Muck Gauge or Other (Ex	oply) ined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduct on Reducti x Surface (Well Data plain in Re	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) ermarks)	ving Roots 4)	Secondary	Indicators (minimum of two required) the Soil Cracks (B6) tige Patterns (B10) the ason Water Table (C2) this Burrows (C8) this Visible on Aerial Imagery (C9) the or Stressed Plants (D1) torphic Position (D2)
Wetland Hyden Primary India Surface High Wax Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatia Sparsely Field Obsert Surface Water	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Ye	magery (B7) Surface (Bi	d; check all that al Water-Sta Aquatic F: True Aqua Hydrogen Oxidized I Presence Recent Irc Thin Muck Gauge or Other (Ex	oply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reductic Surface (Well Data plain in Reduction Reduc	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) ermarks)	ving Roots 4) ed Soils (C6	Secondary Surfac Draina Dry-Se Crayfis (C3) Satura Stunte X Geom X FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)
Wetland Hyden Primary India Surface High Wax Saturatic Water May Sedimer Drift Dep Algal May Iron Dep Inundatic Sparsely Field Obsert Surface Water Table Saturation Personal	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent?	magery (B7) Surface (Bi	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Ird Thin Muck Gauge or Other (Ex	oply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reductic Surface (Well Data plain in Reduction Reduc	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) emarks)	ving Roots 4) ed Soils (C6	Secondary Surfac Draina Dry-Se Crayfis (C3) Satura Stunte X Geom X FAC-N	Indicators (minimum of two required) the Soil Cracks (B6) tige Patterns (B10) the ason Water Table (C2) this Burrows (C8) this Visible on Aerial Imagery (C9) the or Stressed Plants (D1) torphic Position (D2)
Wetland Hyderimary India Surface High Water Mage Sedimer Drift Dep X Algal Mage Iron Dep Inundation Sparsely Field Obsert Surface Water Water Table Saturation Pe (includes cap	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe)	magery (B7) Surface (Bi	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or Other (Ex	poply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe on Reduction Surface (Well Data plain in Reduction Reduction Reduction Surface (Well Data plain in Reduction Reduc	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) ermarks) > 16" 3"	ving Roots 4) ad Soils (Ce	Secondary Surface Draina Dry-See Crayfis (C3) Satura Stunte Sty FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)
Wetland Hyderimary India Surface High Water Mage Sedimer Drift Dep X Algal Mage Iron Dep Inundation Sparsely Field Obsert Surface Water Water Table Saturation Pe (includes cap	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent?	magery (B7) Surface (Bi	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or Other (Ex	poply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe on Reduction Surface (Well Data plain in Reduction Reduction Reduction Surface (Well Data plain in Reduction Reduc	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) ermarks) > 16" 3"	ving Roots 4) ad Soils (Ce	Secondary Surface Draina Dry-See Crayfis (C3) Satura Stunte Sty FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)
Wetland Hyderimary Indices — High Wax X Saturation — Water Mager Mage	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe)	magery (B7) Surface (Bi	d; check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or Other (Ex	poply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe on Reduction Surface (Well Data plain in Reduction Reduction Reduction Surface (Well Data plain in Reduction Reduc	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) ermarks) > 16" 3"	ving Roots 4) ad Soils (Ce	Secondary Surface Draina Dry-See Crayfis (C3) Satura Stunte Sty FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)
Wetland Hyderimary India Surface High Wax Saturation Water Management Sedimer Drift Dep X Algal Management Inundation Sparsely Field Obsert Surface Water Water Table Saturation Per (includes cap Describe Rec	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe) corded Data (stream	magery (B7) Surface (Bi	d: check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iru Thin Muck Gauge or Other (Ex	poply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reducti of Reducti of Surface (Well Data plain in Ref aches): photos, pr	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) emarks) > 16" 3"	ving Roots 4) d Soils (Co	Secondary Surface Draina Dry-See Crayfis (C3) Satura Stunte Sty FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)
Wetland Hyderimary India Surface High Wax Saturation Water Management Sedimer Drift Dep X Algal Management Inundation Sparsely Field Obsert Surface Water Water Table Saturation Per (includes cap Describe Rec	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe)	magery (B7) Surface (Bi	d: check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iru Thin Muck Gauge or Other (Ex	poply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reducti of Reducti of Surface (Well Data plain in Ref aches): photos, pr	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) emarks) > 16" 3"	ving Roots 4) d Soils (Co	Secondary Surface Draina Dry-See Crayfis (C3) Satura Stunte Sty FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)
Wetland Hyderimary India Surface High Wax Saturation Water Management Sedimer Drift Dep X Algal Management Inundation Sparsely Field Obsert Surface Water Water Table Saturation Per (includes cap Describe Rec	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe) corded Data (stream	magery (B7) Surface (Bi	d: check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iru Thin Muck Gauge or Other (Ex	poply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reducti of Reducti of Surface (Well Data plain in Ref aches): photos, pr	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) emarks) > 16" 3"	ving Roots 4) d Soils (Co	Secondary Surface Draina Dry-See Crayfis (C3) Satura Stunte Sty FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)
Wetland Hyderimary India Surface High Wax Saturation Water Management Sedimer Drift Dep X Algal Management Inundation Sparsely Field Obsert Surface Water Water Table Saturation Per (includes cap Describe Rec	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial Ir y Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe) corded Data (stream	magery (B7) Surface (Bi	d: check all that al Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iru Thin Muck Gauge or Other (Ex	poply) ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reducti of Reducti of Surface (Well Data plain in Ref aches): photos, pr	res (B9) (B14) dor (C1) eres on Lived Iron (C fon in Tille (C7) (D9) emarks) > 16" 3"	ving Roots 4) d Soils (Co	Secondary Surface Draina Dry-See Crayfis (C3) Satura Stunte Sty FAC-N	Indicators (minimum of two required) se Soil Cracks (B6) sige Patterns (B10) season Water Table (C2) sh Burrows (C8) sition Visible on Aerial Imagery (C9) sid or Stressed Plants (D1) sorphic Position (D2) sleutral Test (D5)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Project/Site:	(City/County	Tulsa Co	Sampling Date:	10/01/2020	
Applicant/Owner: The Oklahoma Department of Transpor	tation (ODC	OT)		OK	Sampling Point:	DP 13
		Section. To	wnship. Ra	S36-T19N-R12E	Camping Font.	
Landform (hillslope, terrace, etc.): tloodplain terrace				(concave, convex, none):	concave	
Slope (%): 30-35% Lat: 36.089640						
Soil Map Unit Name: W - Water				ation: R2USC		
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Yes	× No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology s				Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology n				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site map			g point l	ocations, transects	, important fe	eatures, etc.
Hydrophytic Vegetation Present? Yes X N	0					
	0		e Sampled			
	o	with	in a Wetlar	nd? Yes X	No	
Remarks:						
This point was determined to be within a wetland due to Wetland 6A/B - PEM	the preser	nce of all 3	wetland cr	iteria.		
VEGETATION – Use scientific names of plants.						
	Absolute			Dominance Test work	sheet:	
None observed	% Cover			Number of Dominant Sp That Are OBL, FACW, of		(4)
2.						(A)
3				Total Number of Domin Species Across All Stra		(B)
4				Percent of Dominant Sp		
5				That Are OBL, FACW, of		(A/B)
Sapling/Shrub Stratum (Plot size:15')		= Total Cov	/er	Prevalence Index work	keheet:	
Common buttonbush (Cephalanthus occidentalis)	5	Yes	OBL	Total % Cover of:		lv bv:
2. Peatree (Sesbania herbacea)	5	Yes	FACW	OBL species		
3.				FACW species	x 2 =	
4				FAC species	x 3 =	
5				FACU species	x 4 =	
5'	10	= Total Cov	/er	UPL species	x 5 =	
Herb Stratum (Plot size:) 1 Eared redstem (Ammannia auriculata)	20	Yes	OBL	Column Totals:	(A)	(B)
Swamp smartweed (Persicaria hydropiperoides)	20	Yes	OBL	Prevalence Index	= B/A =	
3. Sht-brist horn bk sedge (Rhynchospora corniculata)	15	Yes	OBL	Hydrophytic Vegetation		
Plowman's-wort (Pluechea camphorata)	10	No	FACW	X 1 - Rapid Test for H		tation
Aster (Symphyotrichum sp.)*	5	No	FAC	2 - Dominance Tes	t is >50%	
6				3 - Prevalence Inde	ex is ≤3.0 ¹	
7.				4 - Morphological A		
8					s or on a separate	· ' I
9				Problematic Hydror	onytic vegetation	(Explain)
10				¹ Indicators of hydric soil	l and wetland hyd	Irology must
Woody Vine Stratum (Plat size:		= Total Cov	/er	be present, unless distu		
Woody Vine Stratum (Plot size:) None observed						
2.				Hydrophytic Vegetation		
		= Total Cov	 /er	Present? Yes	s_X_ No_	
Remarks: (Include photo numbers here or on a separate s				1		
A positive indication of hydrophytic vegetation was obse						
*19 species of Symphyotrichum are listed in the 2018 R	egional We	tiand Plant	LIST. 84%	nave a FAC or wetter inc	ncator status.	

S	O	ı	L

Sampling Point: DP 13

Depth	Matrix			x Feature			_			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ² _	Texture	Remarks		
0-14	2.5Y 6/3	90	10YR 5/6	10	C	M	sand			
1- 0.0							21			
Hydric Soil	oncentration, D=Depl	etion, RM=R	reduced Matrix, M	S=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :		
			Sandy (Clayed Me	striv (CA)			•		
Histosol	pipedon (A2)			Gleyed Ma Redox (S5			Coast Pra	irie Redox (A16)		
Black Hi				d Matrix (S				ganese Masses (F12)		
	n Sulfide (A4)			Mucky Mir	,			low Dark Surface (TF12)		
	Layers (A5)			Gleyed Ma				plain in Remarks)		
2 cm Mu	ck (A10)			d Matrix (I				-		
	l Below Dark Surface	(A11)	_	Dark Surfa	` '					
_	ark Surface (A12)			d Dark Su	, ,)		hydrophytic vegetation and		
	lucky Mineral (S1)		Redox I	Depressio	ns (F8)			/drology must be present,		
	cky Peat or Peat (S3)					unless dis	turbed or problematic.		
	_ayer (if observed):									
Туре:			_				Hydric Soil Pre	esent? Yes X No		
Depth (inc	ches):		_				11,411.0 00 1 10			
Remarks:										
	olematic Hydric Soils									
								ncentrate water (i.e. concave		
	i active floodplain an problematic soils si							he definition of a hydric soil due to		
	problemane cone on	adiiono (no	i, i laviai ecaimor		locapian	10 4114 000	accriainy i criaca c	, (Contraction)		
HYDROLO	GY									
	drology Indicators:									
	cators (minimum of or	o io roquiro	d: check all that ar	anly)			Socondary I	Indicators (minimum of two required)		
		ie is require	•	. ,,	(DO)					
	Water (A1)		Water-Sta		` '			e Soil Cracks (B6)		
	ter Table (A2)		Aquatic Fa					ge Patterns (B10)		
X Saturation			True Aqua		, ,		Dry-Season Water Table (C2) Crayfish Burrows (C8)			
	arks (B1)		Hydrogen		` '	ina Doots	_ ,	, ,		
	nt Deposits (B2)		Oxidized F Presence					ion Visible on Aerial Imagery (C9)		
	oosits (B3) It or Crust (B4)		Presence Recent Iro		•	,		l or Stressed Plants (D1) rphic Position (D2)		
ı —	osits (B5)					u Jolis (CC		rpnic Position (D2) eutral Test (D5)		
	iosits (ฮอ) on Visible on Aerial In	nagen/P7\	Thin Muck Gauge or					sullar Test (DO)		
ı —	on Visible on Aerial In Vegetated Concave	,			. ,					
Field Obser		Juliace (Bo	,, Other (EX	Jani III Ke	marks)					
		. N.	Depth (in	choo\:						
Surface Wate					> 14"	-				
Water Table			Depth (in		surface	— ₂ ,		×		
Saturation Procession (includes cap		s No	Depth (in	ches):	Sariace	_ Wetla	and Hydrology Pi	resent? Yes X No		
	corded Data (stream	gauge, mon	itoring well, aerial	photos, pr	evious ins	pections).	if available:			
	,		5							
Remarks:										
	dication of wetland h	nydroloav w	as observed (at le	east one n	rimary ind	dicator).				
"		,,		P	,	, .				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Project/Site: I-44/US-75 Interchange (A	rkansas River)	unty։Tulsa Coւ	unty	Sampling Date:	10/01/2020		
Applicant/Owner: The Oklahoma Depar	tment of Transp	oortation (ODC	OT)	unity:	\cap K	Sampling Point:	DD 14
Investigator(s): Megan Philips-Schaap			Section	. Township, Rar	S36-T19N-R12E	Camping roint.	
Landform (hillslope, terrace, etc.): tloodp	lain terrace				(concave, convex, none):	concave	
Slope (%): 30-35% Lat: 36.089769	 9						}
Soil Map Unit Name: W - Water			Long		NWI classific	ation: R2USC	
Are climatic / hydrologic conditions on the	e site typical for	this time of yes	ar2 Vec	a X No	(If no, explain in R	emarke \	
Are Vegetation, Soil, or H					Normal Circumstances" p		< No
					eded, explain any answe		110
Are Vegetation, Soil, or F SUMMARY OF FINDINGS - At						,	eatures, etc.
Hydrophytic Vegetation Present?	Yes		<u></u>			, .	
Hydric Soil Present?	Yes		1	s the Sampled	Area		
Wetland Hydrology Present?			١ ا	within a Wetlan	nd? Yes	No_X	_
Remarks:							
This point was determined not to be v	vithin a wetland	due to the lac	ck of hy	drophytic vege	tation and hydric soils.		
VEGETATION - Use scientific na	ames of plan	ts.					
		Absolute	Domir	nant Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size:)			es? Status	Number of Dominant Sp That Are OBL, FACW, of		(A)
2					Total Number of Domina	ant	
3					Species Across All Stra		(B)
4					Percent of Dominant Sp	pecies	
5					That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size:	,		= Total	Cover	Prevalence Index worl	ksheet:	
1 None observed	,				Total % Cover of:		olv bv:
2.					OBL species		
3.					FACW species		
4					FAC species		
5.					FACU species	x 4 =	
						x 5 =	
Herb Stratum (Plot size:)				Column Totals:		I
'· 					Prevalence Index	= B/A =	
2					Hydrophytic Vegetation		
3					1 - Rapid Test for H		etation
4. 5.					2 - Dominance Tes	, , , ,	
6.					3 - Prevalence Inde		
7.					4 - Morphological A		vide supporting
8.					data in Remarks	s or on a separat	e sheet)
9.					Problematic Hydror	ohytic Vegetation	ı¹ (Explain)
10							
Woody Vine Stratum (Plot size:			= Total	Cover	¹ Indicators of hydric soil be present, unless distu		
None observed					Hydrophytic		
2					Vegetation Present? Yes	n No	×
			= Total	Cover	Fresentr 169	s No_	
Remarks: (Include photo numbers here	e or on a separa	te sheet.)					
No vegetation is present at this data p	ooint location.						

Depth	Matrix		ox Features		
(inches) Color (r		Color (moist)	%Type ¹	Loc ² Texture	Remarks
0-16 2.5Y	7/3 100	-		- sand	
¹ Type: C=Concentration	n, D=Depletion, R	M=Reduced Matrix, M	S=Masked Sand Grain	s. ² Location	: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:				Indicators	for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy	Gleyed Matrix (S4)	Coast I	Prairie Redox (A16)
Histic Epipedon (A2	2)	Sandy	Redox (S5)	Dark S	urface (S7)
Black Histic (A3)		Strippe	d Matrix (S6)	Iron-Ma	anganese Masses (F12)
Hydrogen Sulfide (A	N4)	Loamy	Mucky Mineral (F1)	Very S	hallow Dark Surface (TF12)
Stratified Layers (As	5)	Loamy	Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)		Deplete	ed Matrix (F3)		
Depleted Below Dar	, ,	_	Dark Surface (F6)	•	
Thick Dark Surface	, ,		ed Dark Surface (F7)		of hydrophytic vegetation and
Sandy Mucky Miner	, ,	Redox	Depressions (F8)		I hydrology must be present,
5 cm Mucky Peat or				unless	disturbed or problematic.
Restrictive Layer (if ob	served):				
Туре:				Hudaia Cail	Present? Yes No X
Depth (inches):				Hydric Soil	Present? Yes No _^_
Remarks: No positive indication of Does not satisfy the resupplement (page 113)	quirements (i.e., l		n and wetland hydrolo	gy) in the Problematic	Hydric Soils section in the Regional
No positive indication of Does not satisfy the resupplement (page 113	quirements (i.e., l		n and wetland hydrolo	gy) in the Problematic	Hydric Soils section in the Regional
No positive indication of Does not satisfy the result of Supplement (page 113	quirements (i.e., l		n and wetland hydrolog	gy) in the Problematic	Hydric Soils section in the Regional
No positive indication of Does not satisfy the resupplement (page 113	quirements (i.e., l		n and wetland hydrolog		
No positive indication of Does not satisfy the result of Supplement (page 113	quirements (i.e., l	hydrophytic vegetation			Hydric Soils section in the Regional ry Indicators (minimum of two required)
No positive indication of Does not satisfy the results Supplement (page 113) HYDROLOGY Wetland Hydrology Inc.	quirements (i.e., l). dicators: mum of one is req	hydrophytic vegetation		Seconda	
No positive indication of Does not satisfy the results Supplement (page 113) HYDROLOGY Wetland Hydrology Indicators (mining primary Indicators (mining pri	quirements (i.e., l). licators: mum of one is req	hydrophytic vegetation uired; check all that ap Water-Sta	oply)	Seconda Surf	ry Indicators (minimum of two required)
No positive indication of Does not satisfy the results Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining Surface Water (A1))	quirements (i.e., l). licators: mum of one is req	hydrophytic vegetation uired; check all that ap Water-Sta Aquatic Fa	oply) ined Leaves (B9)	Seconda Surf Drai	ry Indicators (minimum of two required) ace Soil Cracks (B6)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining Surface Water (A1) High Water Table (A)	quirements (i.e., l). licators: mum of one is req	nuired; check all that an Water-Sta Aquatic Fa	oply) hined Leaves (B9) auna (B13)	Seconda Surf Drai Dry-	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining	quirements (i.e., l). dicators: mum of one is req	uired: check all that ap — Water-Sta — Aquatic Fa — True Aqua	oply) nined Leaves (B9) auna (B13) atic Plants (B14)	Seconda Surf Drai Dry Cray	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining	quirements (i.e., l). dicators: mum of one is req	uired: check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I	oply) nined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1)	Seconda	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9)
No positive indication of Does not satisfy the reconstruction of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	quirements (i.e., l.). dicators: mum of one is requested. (B2)	uired: check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I	oply) iined Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4)	Seconda	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc Primary Indicators (mining Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (6)	quirements (i.e., l.). dicators: mum of one is requested. (B2)	uired: check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro	oply) ained Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S	Seconda Surfi Drai Dry- Cray Roots (C3)	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rted or Stressed Plants (D1) morphic Position (D2)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (B3) Iron Deposits (B5)	quirements (i.e., l.). dicators: mum of one is requested. (B2) (B2)	uired: check all that ap water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro	oply) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S	Seconda Surfi Drai Dry- Cray Roots (C3)	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5) Inundation Visible of	quirements (i.e., l.). licators: mum of one is requested. (B2) (B2) The property of the pr	nuired; check all that ap uired; check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck (B7) Gauge or	oply) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S s Surface (C7) Well Data (D9)	Seconda Surfi Drai Dry- Cray Roots (C3)	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rted or Stressed Plants (D1) morphic Position (D2)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Incompression (Marcology Incompressi	quirements (i.e., l.). licators: mum of one is requested. (B2) (B2) The property of the pr	nuired; check all that ap uired; check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck (B7) Gauge or	oply) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S	Seconda Surfi Drai Dry- Cray Roots (C3)	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rted or Stressed Plants (D1) morphic Position (D2)
No positive indication of Does not satisfy the results of Supplement (page 113) HYDROLOGY Wetland Hydrology Inc. Primary Indicators (mining Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (I) Iron Deposits (B5) Inundation Visible of Sparsely Vegetated Field Observations:	duirements (i.e., I icators: mum of one is red (A2) (B2) (B2) on Aerial Imagery (uired: check all that ap Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck (B7) Gauge or	oply) ained Leaves (B9) auna (B13) atic Plants (B14) Sulfide Odor (C1) Rhizospheres on Living of Reduced Iron (C4) on Reduction in Tilled S on Surface (C7) Well Data (D9) plain in Remarks)	Seconda Surfi Drai Dry- Cray Roots (C3)	ry Indicators (minimum of two required) ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rted or Stressed Plants (D1) morphic Position (D2)
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Project/Site:	River)	C	ity/County:	Tulsa Cou	unty	Sampling Date:	10/01/2020
Applicant/Owner: The Oklahoma Department of	Transportatio	n (ODO	T)		∩ĸ		DP 15
Investigator(s): Megan Philips-Schaap		s	ection, Tov	Camping Cont.			
Landform (hillslope, terrace, etc.): tloodplain terra	ace					concave	
Slope (%): 40-45% Lat: 36.089227			ong95.9	86076	(00.10010, 00.1101, 11010)	Datum: NAD83	
Soil Map Unit Name: 27 - Kiomatia loamy fine sa	and, 0 to 1 per	cent slo	pes, frequ	ently floode	ed NWI classific:	PFO1/SS1	Α
Slope (%): 40-45% Lat: 36.089227 Soil Map Unit Name: 27 - Kiomatia loamy fine sa Are climatic / hydrologic conditions on the site typ	ical for this time	e of veal	r? Yes	< No	(If no explain in Re	emarks)	
Are Vegetation, Soil, or Hydrology		,			Normal Circumstances" p		
Are Vegetation, Soil, or Hydrology					eded, explain any answer		110
SUMMARY OF FINDINGS – Attach si				,		,	atures, etc.
Hydrophytic Vegetation Present? Yes _	X No_						
Hydric Soil Present? Yes _				e Sampled			
Wetland Hydrology Present? Yes _	X No_		withi	n a Wetlan	id? Yes <u>X</u>	No	-
Remarks:							
This point was determined to be within a wetland 7A	and due to the	presen	ce of all 3	wetland cri	teria.		
VEGETATION – Use scientific names o	f plants.						
			Dominant		Dominance Test works	sheet:	
Tree Stratum (Plot size:) None observed 1.			Species?		Number of Dominant Sp That Are OBL, FACW, o		(A)
2							(''
3					Total Number of Domina Species Across All Strat		(B)
4					Percent of Dominant Sp		
5					That Are OBL, FACW, of		(A/B)
Cardina/Charle Stratura (Blat sine)		=	Total Cov	er	Prevalence Index work	rehoot:	
Sapling/Shrub Stratum (Plot size:					Total % Cover of:		v bv:
2					OBL species		
3					FACW species		
4					FAC species		
5.					FACU species	x 4 =	
F!			Total Cov	er	UPL species	x 5 =	
Herb Stratum (Plot size:) Swamp smartweed (Persicaria hydropipero	idae)	20	Yes	OBL	Column Totals:	(A)	(B)
Cht briet bewertt en der (Bhomesheren en	`	20 -	Yes	OBL	Dravalanas Inday	- D/A -	
Fared redstem (Ammannia auriculata)		20 -	Yes	OBL	Prevalence Index Hydrophytic Vegetatio		
3. Plowman's-wort (Pluechea camphorata)		20	Yes	FACW	X 1 - Rapid Test for H		ation
4.					2 - Dominance Test		ation
5 6					3 - Prevalence Inde		
7					4 - Morphological A	daptations1 (Prov	ride supporting
8					data in Remarks	or on a separate	sheet)
9					Problematic Hydrop	ohytic Vegetation ¹	(Explain)
10							
		80	Total Cov	er	¹ Indicators of hydric soil be present, unless distu		
Woody Vine Stratum (Plot size:)				be present, unless dista	indea of problema	nuc.
1					Hydrophytic		
2					Vegetation Present? Yes	s_X_ No_	
Remarks: (Include photo numbers here or on a	senarate chas		: Total Cov	er			
	•	,					
A positive indication of hydrophytic vegetation	was observed	d (Rapid	Test for H	lydrophytic	Vegetation).		

_	_	
c	n	
	u	

Sampling Point: DP 15

(inches) 0-3	Matrix			x Features						
0-3	Color (moist)		Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks		
	2.5Y 5/3	100	-				sand	organic 		
3-16	2.5Y 7/6	100	_	-	-	-	sand			
		- — —								
		- — —								
¹ Type: C=Ce	oncentration, D=Dep	letion, RM=Red	uced Matrix, MS	S=Masked	Sand Gra	ains.	² Location: PL	=Pore Lining, M=Matrix.		
Hydric Soil								Problematic Hydric Soils ³ :		
Histosol	(A1)		Sandy C	Sleyed Ma	trix (S4)		Coast Prair	ie Redox (A16)		
_	oipedon (A2)			Redox (S5			Dark Surfac			
Black Hi	istic (A3)		Stripped	Matrix (S	86)		Iron-Manga	nese Masses (F12)		
Hydroge	en Sulfide (A4)		Loamy	Mucky Mir	neral (F1)			w Dark Surface (TF12)		
Stratified	d Layers (A5)		Loamy (Gleyed Ma	atrix (F2)		X Other (Expl	ain in Remarks)		
2 cm Mu	ıck (A10)		Deplete	d Matrix (f	F3)					
Depleted	d Below Dark Surfac	e (A11)	Redox [Dark Surfa	ice (F6)					
Thick Da	Thick Dark Surface (A12) Depleted Dark Surface (F7)						³ Indicators of h	ydrophytic vegetation and		
. —	Sandy Mucky Mineral (S1) Redox Depressions (F8)							Irology must be present,		
	icky Peat or Peat (S						unless dist	urbed or problematic.		
Restrictive I	Layer (if observed):	· ·								
Туре:								X		
Depth (in	ches):						Hydric Soil Pres	sent? Yes X No		
Remarks:										
	blamatia Iludria Cail	a aaatian in tha	Dagianal Cunn	lamant (n						
	blematic Hydric Soil						to collect and con	centrate water (i.e. concave		
								e definition of a hydric soil due to		
	e problematic soils s									
								, , , , , , , , , , , , , , , , , , ,		
HYDROLO	GY									
	drology Indicators:									
1			abaak all that an	m la cl			0	dianton (minimum of two monutes d)		
	cators (minimum of o	one is required; o					Secondary Indicators (minimum of two required)			
—	Water (A1)		Water-Stai	ned Leave						
High Wa	ater Table (A2)				` '		Surface	Soil Cracks (B6)		
							Surface S Drainage	Soil Cracks (B6) Patterns (B10)		
Saturation	Saturation (A3) True Aquatic Plants (B14)						Surface Surface Drainage	Soil Cracks (B6) Patterns (B10) son Water Table (C2)		
Water M	larks (B1)		True Aqua	tic Plants Sulfide Od) (B14) dor (C1)		Surface Surface Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)		
Water M	, ,		True Aqua	tic Plants Sulfide Od) (B14) dor (C1)	ng Roots (Surface Surface Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10) son Water Table (C2)		
Water M Sedimer	larks (B1)		True Aqua	tic Plants Sulfide Oc Rhizosphe) (B14) dor (C1) res on Livi		Surface Surface Drainage Dry-Seas Crayfish	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)		
Water M Sedimer Drift Dep	larks (B1) nt Deposits (B2)		True Aqua Hydrogen Oxidized F	tic Plants Sulfide Oo Rhizosphe of Reduce) (B14) dor (C1) res on Livi ed Iron (C4	.)	Surface : Drainage Dry-Seas Crayfish Saturation X Stunted of	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9)		
Water M Sedimer Drift Dep Algal Ma	larks (B1) nt Deposits (B2) posits (B3)		True Aqua Hydrogen Oxidized F	tic Plants Sulfide Od Rhizosphe of Reduce n Reduction	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled	.)	Surface = Drainage Dry-Seas Crayfish (C3) Saturatio X Stunted (S) X Geomore	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1)		
Water M Sedimer Drift Dep Algal Ma	larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	lmagery (B7)	True Aqua Hydrogen Oxidized F Presence	tic Plants Sulfide Od Rhizosphe of Reduce n Reduction Surface ((B14) dor (C1) res on Livi d Iron (C4 on in Tilleo	.)	Surface = Drainage Dry-Seas Crayfish (C3) Saturatio X Stunted (S) X Geomore	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2)		
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Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely	larks (B1) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) Int or Crust (B4) Int or Crust (B5) Int or Crust (B5) Int or Crust (B5) Int or Crust (B4) I	e Surface (B8)	True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or N Other (Exp	tic Plants Sulfide Oc Rhizosphe of Reduce n Reductic Surface (Well Data blain in Re	(B14) dor (C1) res on Livi ed Iron (C4 on in Tilleo C7) (D9)	.)	Surface = Drainage Dry-Seas Crayfish (C3) Saturatio X Stunted (S) X Geomore	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2)		
Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat	larks (B1) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) Int or Crust (B4) Int or Crust (B5) Int or Crust (B5) Int or Crust (B5) Int or Crust (B4) I	e Surface (B8)	True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	tic Plants Sulfide Oc Rhizosphel of Reduce n Reductic Surface (Well Data blain in Re	(B14) dor (C1) res on Livi ed Iron (C4 on in Tilleo C7) (D9)	.)	Surface = Drainage Dry-Seas Crayfish (C3) Saturatio X Stunted (S) X Geomore	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2)		
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Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P	larks (B1) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) I	e Surface (B8)	True Aqua Hydrogen Oxidized F Presence C Recent Iro Thin Muck Gauge or V Other (Exp	tic Plants Sulfide Oc Rhizospher of Reduce n Reductic Surface (Well Data plain in Re ches): ches):	(B14) (dor (C1) res on Livi ed Iron (C4 on in Tilled C7) (D9) emarks)	d Soils (C6	Surface : Drainage Dry-Seas Crayfish Saturatio X Stunted (X) FAC-Neu	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2)		
Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes cap	larks (B1) Int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial I y Vegetated Concave vations: er Present? Present? Y resent? Y resent? Y resent? Y	e Surface (B8) 'es No _ 'es No _ 'es No _	True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp X Depth (ind X Depth (ind	tic Plants Sulfide Oc Rhizosphei of Reduce n Reductic Surface (Well Data blain in Re ches): ches):	(B14) (B14) (dor (C1) res on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks) > 16" > 16"	d Soils (C6	Surface : Drainage Dry-Seas Crayfish Saturation X Stunted (X) FAC-Neur	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2) Utral Test (D5)		
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Water M Sedimer Drift Der Algal Ma Iron Der Inundati Sparsely Field Obser Surface Wate Water Table Saturation P (includes car Describe Re	larks (B1) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) Int or Crust (B4) Int or Crust (B4) Int or Crust (B5) Int or Crust (B5) Int or Crust (B5) Int or Crust (B4) Int or Crust (B4) Int or Crust (B4) Int or Crust (B2) I	e Surface (B8) 'es No _ 'es No _ 'es No _ gauge, monitor	True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or N Other (Exp X Depth (ind X Depth (ind	tic Plants Sulfide Oc Rhizosphe of Reduce n Reductic Surface (Well Data blain in Re ches): ches): photos, pre	(B14) (B14) dor (C1) res on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks) > 16" > 16" evious ins	Wetla	Surface : Drainage Dry-Seas Crayfish Saturation X Stunted of X Geomory X FAC-Neural	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Orbic Position (D2) Utral Test (D5)		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Project/Site: I-44/US-75 Interchange (A	rkansas River)	City	/County: Tulsa Cou	ınty	Sampling Date: 10/01/2020		
Applicant/Owner: The Oklahoma Depar	tment of Trans	portation (ODOT)		State: OK	Sampling Point: DP 16		
Investigator(s): Megan Philips-Schaap		Sec	ction Township Ran	S36-T19N-R12E	Camping Fourt.		
Landform (hillslope, terrace, etc.): tloodp	olain terrace		Local relief (concave, convex, none):	concave		
Slope (%): 35-40% Lat: 36.08927	7						
Soil Map Unit Name: 27 - Kiomatia Ioan	ny fine sand, 0 t	to 1 percent slope	es, frequently floode	ed NWI classific	ation: PFO1/SS1A		
Are climatic / hydrologic conditions on the							
Are Vegetation, Soil, or F	lydrology	_ significantly dist	urbed? Are "I	Normal Circumstances" p	resent? Yes X No		
Are Vegetation, Soil, or H				eded, explain any answer	rs in Remarks.)		
SUMMARY OF FINDINGS - At				ocations, transects	, important features, etc.		
Hydrophytic Vegetation Present?	Yes	NoX					
Hydric Soil Present?	Yes	NoX	Is the Sampled Area				
Wetland Hydrology Present?	YesX_	No	within a Wetlan	d? Yes	No _X		
Remarks:			•				
This point was determined not to be v	vithin a wetland	due to the lack o	of hydrophytic veget	ation and hydric soils.			
VEGETATION – Use scientific n	ames of plan	its.					
			ominant Indicator	Dominance Test works	sheet:		
Tree Stratum (Plot size:)	% Cover S	pecies? Status	Number of Dominant Sp That Are OBL, FACW, of			
2.				Total Number of Domina	```		
3			I	Species Across All Stra	ta: (B)		
4			—— ——	Percent of Dominant Sp			
5		=T	otal Cover	That Are OBL, FACW, o	or FAC: (A/B)		
Sapling/Shrub Stratum (Plot size:)		otal cover	Prevalence Index work	sheet:		
1. None observed				Total % Cover of:	Multiply by:		
2				OBL species	x 1 =		
3				FACW species	x 2 =		
4					x 3 =		
5					x 4 =		
Horb Stratum (Blot size:	`	= T	otal Cover		x 5 =		
Herb Stratum (Plot size:	/			Column Totals:	(A) (B)		
2.				Prevalence Index	= B/A =		
3			r	Hydrophytic Vegetatio	n Indicators:		
4.			I	1 - Rapid Test for H	lydrophytic Vegetation		
5.			I	2 - Dominance Tes	t is >50%		
6			I	3 - Prevalence Inde	x is ≤3.0 ¹		
7				4 - Morphological A data in Remarks	daptations ¹ (Provide supporting s or on a separate sheet)		
8 9			I	Problematic Hydrop	ohytic Vegetation¹ (Explain)		
10							
10.		= T	otal Cover		and wetland hydrology must		
Woody Vine Stratum (Plot size:)			be present, unless distu	rbed or problematic.		
			—— ——	Hydrophytic Vegetation			
2			otal Cover		s No_X_		
Remarks: (Include photo numbers here	e or on a separa		otal Govel				
,		,					
No vegetation is present at this data p	point location.						

	Matrix			Features		
(inches)	Color (moist)	%	Color (moist)	%Type ¹ l	_oc² Texture	Remarks
0-18	2.5Y 7/3	100			- fine sand	
1Type: C=Cc	ncontration D=Der	olotion PM-Pa	aduced Matrix MS	=Masked Sand Grains	21 ocation:	PL=Pore Lining, M=Matrix.
Hydric Soil I		Dietion, Kivi–Ke	educed Matrix, Mo	-Waskeu Sanu Grains		or Problematic Hydric Soils ³ :
Histosol			Sandy G	leyed Matrix (S4)		rairie Redox (A16)
_	ipedon (A2)			edox (S5)	_	rface (S7)
Black His				Matrix (S6)	_	nganese Masses (F12)
_	n Sulfide (A4)			lucky Mineral (F1)	_	allow Dark Surface (TF12)
Stratified	Layers (A5)			Bleyed Matrix (F2)		explain in Remarks)
2 cm Mu	ck (A10)		Depleted	l Matrix (F3)		
	Below Dark Surfac	e (A11)	_	ark Surface (F6)	•	
	rk Surface (A12)			l Dark Surface (F7)		of hydrophytic vegetation and
	ucky Mineral (S1)		Redox D	epressions (F8)		hydrology must be present,
	cky Peat or Peat (S	-			unless o	disturbed or problematic.
	.ayer (if observed)	:				
Type:			_		Hydric Soil F	Present? Yes No _X_
Depth (inc	:hes):		_		.,	
Remarks:						
HYDROLO						
-	Irology Indicators:					
Primary Indic						
	ators (minimum of o		; check all that ap	ply)	Secondar	y Indicators (minimum of two required)
Surface	ators (minimum of o			oly) ned Leaves (B9)		y Indicators (minimum of two required) ce Soil Cracks (B6)
				ned Leaves (B9)	Surfa	
	Water (A1) ter Table (A2)		Water-Stair	ned Leaves (B9)	Surfa Drain	ce Soil Cracks (B6)
High Wa	Water (A1) ter Table (A2)		Water-Stair Aquatic Far True Aquat	ned Leaves (B9) una (B13)	Surfa Drain Dry-S	ce Soil Cracks (B6) age Patterns (B10)
High Wa Saturatio Water Mail Sedimen	Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2)		Water-Stair Aquatic Far True Aquat Hydrogen S	ned Leaves (B9) una (B13) ic Plants (B14)	Surfa Drain Dry-S Crayf	ce Soil Cracks (B6) age Patterns (B10) season Water Table (C2)
High Wa Saturatio Water Mail Sedimen	Water (A1) ter Table (A2) on (A3) arks (B1)		Water-Stain Aquatic Fai True Aquat Hydrogen S Oxidized R	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1)	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt	ce Soil Cracks (B6) age Patterns (B10) Season Water Table (C2) sish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
High Wa Saturatio Water Mater Material	Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2)		Water-Stain Aquatic Fai True Aquat Hydrogen S Oxidized R Presence c	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) Seon	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2)
High Wa Saturatic Water M Sedimen Drift Dep Algal Ma	Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5)	one is required	Water-Stain Aquatic Far True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7)	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) Seon	ce Soil Cracks (B6) age Patterns (B10) Season Water Table (C2) sish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep	Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial	one is required	Water-Stain Aquatic Far True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9)	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) Seon	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2)
High Wa Saturation Water Mater	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav	one is required	Water-Stain Aquatic Far True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7)	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) Seon	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2)
High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav	one is required Imagery (B7) e Surface (B8)	Water-Stain Aquatic Far Aquatic Far True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks)	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) Seon	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2)
High Wa Saturation Water Mi Sedimen Drift Dep Algal Ma Iron Dep Inundation X Sparsely Field Observ Surface Water	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial Vegetated Concav vations: er Present?	Imagery (B7) e Surface (B8)	Water-Stain Aquatic Far True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living if Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks)	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) Seon	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2)
High Wa Saturation Water Mi Sediment Drift Dep Algal Ma Iron Dep Inundation X Sparsely Field Observa	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial Vegetated Concav vations: er Present?	Imagery (B7) e Surface (B8)	Water-Stain Aquatic Far Aquatic Far True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp	med Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks) hes):	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) FAC-	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio X Sparsely Field Observ Surface Water Water Table Saturation Pr	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? Y esent?	Imagery (B7) e Surface (B8) /es No /es No	Water-Stain Aquatic Far True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks) hes):	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) FAC-	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2)
High Wa Saturation Water Mi Sedimen Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water Water Table Saturation Pr (includes cap	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? vesent? villary fringe)	Imagery (B7) e Surface (B8) 'es No 'es No 'es No	Water-Stain Aquatic Fan True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks) hes):	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) FAC- Wetland Hydrology	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
High Wa Saturation Water Mi Sedimen Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water Water Table Saturation Pr (includes cap	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? vesent? villary fringe)	Imagery (B7) e Surface (B8) 'es No 'es No 'es No	Water-Stain Aquatic Fan True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks) hes):	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) FAC- Wetland Hydrology	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
High Wa Saturation Water M. Sediment Drift Dep Algal Ma Iron Dep Inundation X Sparsely Field Observation Surface Water Water Table Saturation Pr (includes cap	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? vesent? villary fringe)	Imagery (B7) e Surface (B8) 'es No 'es No 'es No	Water-Stain Aquatic Fan True Aquat Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks) hes):	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) FAC- Wetland Hydrology	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
High Wa Saturation Water M. Sediment Drift Dep Algal Ma Iron Dep Inundation X Sparsely Field Observa Surface Water Water Table Saturation Predincludes cape Describe Recommendation Remarks:	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) ot or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? viillary fringe) corded Data (stream	Imagery (B7) e Surface (B8) /es No /es No /es No n gauge, monit	Water-Stain Aquatic Far Aquatic Far True Aquatic Hydrogen Sir Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp X Depth (incomoring well, aerial process)	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9) Idain in Remarks) hes): > 18" hes): > 18" hotos, previous inspect	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) K Geon FAC- Wetland Hydrology ctions), if available:	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
High Wa Saturation Water M. Sediment Drift Dep Algal Ma Iron Dep Inundation X Sparsely Field Observa Surface Water Water Table Saturation Predincludes cape Describe Recommendation Remarks:	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) ot or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? viillary fringe) corded Data (stream	Imagery (B7) e Surface (B8) /es No /es No /es No n gauge, monit	Water-Stain Aquatic Far Aquatic Far True Aquatic Hydrogen Sir Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp X Depth (incomoring well, aerial process)	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) lain in Remarks) hes):	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) K Geon FAC- Wetland Hydrology ctions), if available:	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
High Wa Saturation Water M. Sediment Drift Dep Algal Ma Iron Dep Inundation X Sparsely Field Observ Surface Water Water Table Saturation Profincludes cape Describe Recommendation Remarks:	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) ot or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? viillary fringe) corded Data (stream	Imagery (B7) e Surface (B8) /es No /es No /es No n gauge, monit	Water-Stain Aquatic Far Aquatic Far True Aquatic Hydrogen Sir Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp X Depth (incomoring well, aerial process)	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9) Idain in Remarks) hes): > 18" hes): > 18" hotos, previous inspect	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) K Geon FAC- Wetland Hydrology ctions), if available:	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)
High Wa Saturation Water Manager Sediment Drift Dep Algal Manager Iron Dep Inundation X Sparsely Field Observ Surface Water Water Table Saturation Profincludes cap Describe Recommendation Remarks:	Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) ot or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav vations: er Present? Present? viillary fringe) corded Data (stream	Imagery (B7) e Surface (B8) /es No /es No /es No n gauge, monit	Water-Stain Aquatic Far Aquatic Far True Aquatic Hydrogen Sir Oxidized R Presence of Recent Iror Thin Muck Gauge or V Other (Exp X Depth (incomoring well, aerial process)	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) in Reduction in Tilled S Surface (C7) Vell Data (D9) Idain in Remarks) hes): > 18" hes): > 18" hotos, previous inspect	Surfa Drain Dry-S Crayf Roots (C3) Satur Stunt oils (C6) K Geon FAC- Wetland Hydrology ctions), if available:	ce Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bish Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) horphic Position (D2) Neutral Test (D5)

Project/Site: I-44/US-75 Interchange (Arkansas River)	(City/County	: Tulsa Co	unty	Sampling Da	10/01/2	2020
Applicant/Owner: The Oklahoma Department of Transporta	ation (ODC	OT)		OK	Sampling Poi	DP 17	
		Section. To	wnship. Ra	S36-T19N-R12E	ouripining i o		
Landform (hillslope, terrace, etc.): floodplain terrace				(concave, convex, none):	concave		
Slope (%): 30-35% Lat: 36.089197	ı	ong95.9	985953	(00.110.110, 00.1101, 110.110).	Datum: NAC	083	
Slope (%): 30-35% Lat: 36.089197 Soil Map Unit Name: 27 - Kiomatia loamy fine sand, 0 to 1	percent slo	opes, frequ	uently flood	ed NWI classific	ation: PFO1/	SS1A	
Are climatic / hydrologic conditions on the site typical for this							
				Normal Circumstances" p		X N	
Are Vegetation, Soil, or Hydrology sig				eded, explain any answe			
Are Vegetation, Soil, or Hydrology na SUMMARY OF FINDINGS – Attach site map s			,	,		,	s, etc.
Hydrophytic Vegetation Present? Yes X No							
			e Sampled				
Wetland Hydrology Present? Yes X No		with	in a Wetlar	nd? Yes X	No		
Remarks:							
This point was determined to be within a wetland due to Wetland 7B	the preser	ice of all 3	wetland cri	iteria.			
VEGETATION – Use scientific names of plants.							
	Absolute			Dominance Test work	sheet:		
Tree Stratum (Plot size:) 1. Mone observed	% Cover			Number of Dominant Sp That Are OBL, FACW, o		3	(A)
2				Total Number of Domina	ant	•	
3				Species Across All Stra		3	(B)
4				Percent of Dominant Sp	ecies	4000/	
5				That Are OBL, FACW, o	or FAC:	100%	(A/B)
Sapling/Shrub Stratum (Plot size:)		= Total Co	ver	Prevalence Index worl	ksheet:		
1. None observed				Total % Cover of:	Μι	ıltiply by:	_
2				OBL species	x 1 = _		_
3				FACW species	x 2 = _		_
4				FAC species	x 3 = _		_
5				FACU species	x 4 = _		-
Harb Stratium (Blat size) 5'		= Total Co	ver		x 5 = _		- 1
Herb Stratum (Plot size:) Swamp smartweed (Persicaria hydropiperoides)	25	Yes	OBL	Column Totals:	(A) _		_ (B)
Plowman's-wort (Pluechea camphorata)	20	Yes	FACW	Prevalence Index	= B/A =		
Late-flowering thoroughwort (Eupatorium serotinum)	20	Yes	FAC	Hydrophytic Vegetation			=
Sht-brist horn bk sedge (Rhynchospora corniculata)	10	No	OBL	1 - Rapid Test for H	lydrophytic Ve	egetation	
Rough cockleburr (Xanthium strumarium)	10	No	FAC	X 2 - Dominance Tes	t is >50%		
6. Yellowdicks (Helenium amarum)	2	No	FACU	3 - Prevalence Inde	x is ≤3.0 ¹		
7				4 - Morphological A	daptations1 (F	Provide supp	porting
8				data in Remarks Problematic Hydror			
9				Problematic Hydrop	mytic vegetat	lion (Expiai	")
10				¹ Indicators of hydric soil	and wetland	hydrology n	nuet
Manda Vina Chadana (Blataina		= Total Co	ver	be present, unless distu			ilust
Woody Vine Stratum (Plot size:) None observed							
2.				Hydrophytic Vegetation			
2		= Total Co	ver	Present? Yes	s_X_ No	o	
Remarks: (Include photo numbers here or on a separate sh				l			
A positive indication of hydrophytic vegetation was obser	ved (>50%	of domin	ant species	indexed as OBL_FACW	or FAC)		
The state of the s			550000		,,.		

S	O	ı	L

Sampling Point: DP 17

Depth	Matri			Redo	x Feature	s				
(inches)	Color (moist)		_ <u>_ C</u>	olor (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-18	2.5Y 7/6	100		-	-	-	-	sand		
1								2		
	ncentration, D=[Depletion, R	M=Redu	uced Matrix, MS	S=Masked	Sand Gra	ains.		L=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators:							Indicators for	Problematic Hydric Soils ³ :	
Histosol ((A1)			Sandy C	Sleyed Ma	atrix (S4)		Coast Prai	irie Redox (A16)	
Histic Ep	ipedon (A2)			Sandy F	Redox (S5	i)		Dark Surfa	ace (S7)	
Black His	tic (A3)			Stripped	l Matrix (S	86)		Iron-Mang	anese Masses (F12)	
	n Sulfide (A4)			Loamy I	Mucky Mir	neral (F1)			ow Dark Surface (TF12)	
Stratified	Layers (A5)			Loamy (Gleyed Ma	atrix (F2)		X Other (Exp	olain in Remarks)	
2 cm Mu	ck (A10)			Deplete	d Matrix (F3)				
Depleted	Below Dark Sur	face (A11)		Redox [Dark Surfa	ace (F6)				
Thick Da	rk Surface (A12)			Deplete	d Dark Su	ırface (F7)		³ Indicators of I	hydrophytic vegetation and	
Sandy M	ucky Mineral (S1	1)		Redox [Depressio	ns (F8)		wetland hy	drology must be present,	
5 cm Mu	cky Peat or Peat	(S3)						unless dist	turbed or problematic.	
Restrictive L	ayer (if observe	ed):								
Type:										
	hes):							Hydric Soil Pre	esent? Yes <u> </u>	
Remarks:										
	lematic Hydric S									
									ncentrate water (i.e. concave	
									ne definition of a hydric soil d	ue to
one or more	problematic soi	is situations	(i.e., Fi	iuviai Sedimen	is within i	-iooupiairi	s and sea	sonally Ponded S	solis).	
HYDROLOG	Ϋ́									
Wetland Hyd	rology Indicato	rs:								
Primary Indic	ators (minimum	of one is rea	uired: cl	heck all that ap	(ylq			Secondary I	ndicators (minimum of two red	uired)
	Vater (A1)			Water-Stai		ec (BQ)			Soil Cracks (B6)	, , , ,
	, ,					` ′			, ,	
ı —	er Table (A2)			Aquatic Fa	,	-			e Patterns (B10)	
Saturatio				True Aqua		` '			ason Water Table (C2)	
Water Ma	, ,			Hydrogen		, ,			n Burrows (C8)	
Sedimen	t Deposits (B2)			Oxidized F	Rhizosphe	res on Livi	ing Roots (C3) Saturati	on Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Presence	of Reduce	ed Iron (C4	!)	X Stunted	or Stressed Plants (D1)	
Algal Mat	or Crust (B4)			Recent Iro	n Reducti	on in Tilled	Soils (C6) X Geomoi	rphic Position (D2)	
Iron Depo	osits (B5)			Thin Muck	Surface ((C7)		X FAC-Ne	eutral Test (D5)	
	n Visible on Aer	ial Imagery (B7)	Gauge or \						
	Vegetated Cond			Other (Exp						
		ave ourrace	(00)	Other (Exp	naiii iii ike	illaiks)				
Field Observ				V						
Surface Wate	r Present?			X Depth (ind		> 18"	-			
Water Table I	Present?	Yes	_ No	X Depth (ind	ches):		_			
Saturation Pro	esent?	Yes	No _	X Depth (inc	ches):	> 18"	_ Wetla	ind Hydrology Pr	resent? Yes X No _	
(includes cap	illary fringe)									
Describe Rec	orded Data (stre	am gauge, i	nonitori	ng well, aerial p	photos, pr	evious ins	pections), i	f available:		
Remarks:										
	dication of wetla	and hydrolog	y was o	observed (at le	ast two s	econdarv	indicators)	i		
' ' ' ' '		, · · · · ·		. (,			
İ										

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Project/Site:I-44/US-75 Interchange (Arkansas River)		City/County	r: Tulsa Co	unty	Sampling Date	10/01/2020
Applicant/Owner: The Oklahoma Department of Transpo	ortation (OD	OT)	·	State: OK	Sampling Poin	DP 18
Investigator(s): Megan Philips-Schaap		Section To	wnshin Ra	nge:S36-T19N-R12E	Camping 1 on	
Landform (hillslope, terrace, etc.): tloodplain terrace		occion, re	Local relief	(concave, convex, none):	concave	
Slope (%): 35-40 Let: 36.089253		Long: -95.	985312	(concave, convex, none).	Datum: NAD8	33
Slope (%): 35-40 Lat: 36.089253 Soil Map Unit Name: 27 - Kiomatia loamy fine sand, 0 to Are climatic / hydrologic conditions on the site typical for th	1 percent sl	opes, frequ	uently flood	ed NAM stansific	PFO1/S	S1A
Soil Map Unit Name:		2.1/		NVVI classific	ation:	
,	,			(,,	,	
Are Vegetation, Soil, or Hydrology				'Normal Circumstances" p		
Are Vegetation, Soil, or Hydrology	naturally pro	blematic?	(If ne	eeded, explain any answer	rs in Remarks.)	1
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	, important	features, etc.
Hydrophytic Vegetation Present? Yes X						
Hydric Soil Present? Yes 1	NoX		ne Sampled		.,	
Wetland Hydrology Present? Yes X	No	with	nin a Wetlar	nd? Yes	No _X	_
Remarks:						
This point was determined not to be within a wetland of	due to the la	ck of hydric	soils.			
VEGETATION – Use scientific names of plants	3.					
30'	Absolute		Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size:) Green ash (Fraxinus pennsylvanica)	<u>% Cover</u> 15	Species? Yes	FACW	Number of Dominant Sp		8 (4)
2. Ash-leaf maple (Acer negundo)	- 15	Yes	FAC	That Are OBL, FACW, o	or FAC:	(A)
3. American elm (Ulmus americana)	- 10	Yes	FACW	Total Number of Domina		10 (5)
4				Species Across All Stra	ta:	(B)
5.				Percent of Dominant Sp		80%
	40	= Total Co	ver	That Are OBL, FACW, o	or FAC:	(A/B)
Sapling/Shrub Stratum (Plot size:15')				Prevalence Index work	ksheet:	
1. Red mulberry (Morus rubra)	$-\frac{15}{5}$	Yes	FACU	Total % Cover of:		
2. American pokeweed (Phyolacca americana)		Yes	FACU	OBL species		
3				FACW species		
4				FACILIANSIA		
5		= Total Co		FACU species		
Herb Stratum (Plot size:5')		- Total Co	ver	Column Totals:		
1. Late-flowering thoroughwort (Eupatorium serotinum) 25	Yes	FAC_	Column Totals:	(' ' _	(5)
2. Blue mistflower (Conoclinium coelestinum)	15	Yes	FACW	Prevalence Index	= B/A =	
3. Eastern poison ivy (Toxicodendron radicans)	_ 15	Yes	FAC	Hydrophytic Vegetatio		
4. Great ragweed (Ambrosia trifida) Golden crownbeard (Verbesina encelioides)	_ 15	Yes	FAC	1 - Rapid Test for H		getation
Johnson grass (Sorghum halenense)	_ 10	No No	FAC	× 2 - Dominance Tes		
Snotted lady's-thumh (Persicaria maculosa)	- 10 5	No No	FACU FACW	3 - Prevalence Inde		ravida avanastina
Bristle grass (Setaria sp.)*	- - 5	No	FAC	4 - Morphological A data in Remarks		
8				Problematic Hydrop	-	
9						
10	100	= Total Co	wer	¹ Indicators of hydric soil		
Woody Vine Stratum (Plot size:) Grape (Vitis sp.)**				be present, unless distu	irbed or probler	matic.
1. Grape (Vitis sp.)**	_ 10	Yes	FAC	Hydrophytic		
2				Vegetation	, X M-	
		= Total Co	ver	Present? Yes	s_X_ No	
Remarks: (Include photo numbers here or on a separate A positive indication of hydrophytic vegetation was obs * 6 species of Setaria are listed in the USACE 2018 Re** 7 species of Vitis are listed in the USACE State of O	served (>50% egional Wetla	and Plant L	_ist. 67% ha	ave a FAC (N=4) indicato	r status.	

Depth (inches)	Matrix Color (moist)	——————————————————————————————————————	Color (moist)	Features Type ¹	Loc ² Texture	Domorko
(inches) 0-2	10YR 5/3	100	Color (Inoist)		- sandy clay	Remarks
2-6	10YR 3/2	100			- sandy clay	
6-16	10YR 4/1	100			- sandy clay	
					- Salidy Clay	
		- — —				
		- —— —				
		oletion, RM=Re	educed Matrix, MS	=Masked Sand Grain		on: PL=Pore Lining, M=Matrix.
Hydric Soil						rs for Problematic Hydric Soils ³ :
Histoso	. ,			eyed Matrix (S4)	_	st Prairie Redox (A16)
	pipedon (A2) listic (A3)			edox (S5) Matrix (S6)		(Surface (S7) Manganese Masses (F12)
_	en Sulfide (A4)			ucky Mineral (F1)	_	Shallow Dark Surface (TF12)
	d Layers (A5)			leyed Matrix (F2)		er (Explain in Remarks)
	uck (A10)			Matrix (F3)	_	,,
Deplete	d Below Dark Surfac	e (A11)	Redox D	ark Surface (F6)		
Thick D	ark Surface (A12)		Depleted	Dark Surface (F7)	³ Indicato	ors of hydrophytic vegetation and
	Mucky Mineral (S1)		Redox D	epressions (F8)		and hydrology must be present,
	ucky Peat or Peat (S				unle	ss disturbed or problematic.
	Layer (if observed)	:				
Type:					Hydric So	oil Present? Yes No _X
Depth (in Remarks:	icnes):					
Wotland Hy	drology Indicators:					
-	cators (minimum of		check all that and	dv)	Secon	dary Indicators (minimum of two required)
	· Water (A1)	one is required	•	ed Leaves (B9)		urface Soil Cracks (B6)
	ater Table (A2)		Aquatic Fau	, ,		rainage Patterns (B10)
	ion (A3)			c Plants (B14)		ry-Season Water Table (C2)
	∕larks (B1)			sulfide Odor (C1)		rayfish Burrows (C8)
	nt Deposits (B2)					aturation Visible on Aerial Imagery (C9)
	posits (B3)			f Reduced Iron (C4)	—	tunted or Stressed Plants (D1)
Algal M	at or Crust (B4)			Reduction in Tilled S		eomorphic Position (D2)
			Thin Muck 9			AC-Neutral Test (D5)
	posits (B5)		I nin wuck	Surface (C7)	<u> </u>	-to-Nedital Test (D3)
Iron De	posits (B5) ion Visible on Aerial	Imagery (B7)	Gauge or W	Surface (C7) /ell Data (D9)	<u> </u>	no-Neutral Test (DO)
Iron De	. , ,		Gauge or W	/ell Data (D9)	<u> </u>	no-Neutral Test (D3)
Iron De	ion Visible on Aerial y Vegetated Concav	e Surface (B8)	Gauge or W	/ell Data (D9) ain in Remarks)	<u> </u>	no-recuital rest (DD)
Iron De Inundat Sparsel	ion Visible on Aerial y Vegetated Concav rvations: ter Present?	e Surface (B8)	Gauge or W Other (Expl	/ell Data (D9) ain in Remarks) nes):	<u> </u>	no-neutral rest (55)
Iron De Inundat Sparsel	ion Visible on Aerial y Vegetated Concav rvations: ter Present? Present?	e Surface (B8) /es No /es No	Gauge or W Other (Expl X Depth (incl X Depth (incl	res):		
Iron De Inundat Sparsel Field Obser Surface Wa Water Table Saturation F	ion Visible on Aerial y Vegetated Concav rvations: ter Present? Present? Yesent?	e Surface (B8) /es No /es No	Gauge or W Other (Expl	res):		ogy Present? Yes X No
Iron De Inundat Sparsel Field Obset Surface Water Table Saturation F (includes ca	ion Visible on Aerial y Vegetated Concav rvations: ter Present? Present? Y Present? y pillary fringe)	e Surface (B8) /es No /es No /es No	Gauge or W Other (Expl X Depth (incl X Depth (incl X Depth (incl	res):	Wetland Hydrolo	
Iron De Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca Describe Re	ion Visible on Aerial y Vegetated Concav rvations: ter Present? Present? Yesent? Yesent? Yesent?	e Surface (B8) /es No /es No /es No	Gauge or W Other (Expl X Depth (incl X Depth (incl X Depth (incl	/ell Data (D9) ain in Remarks) nes): > 16" nes): > 16"	Wetland Hydrolo	
Iron De Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca Describe Re Remarks:	ion Visible on Aerial y Vegetated Concav rvations: ter Present? Present? y pillary fringe) ecorded Data (stream	e Surface (B8) /es No /es No /es No n gauge, monit	Gauge or W Other (Expl X Depth (incl X Depth (incl X Depth (incl oring well, aerial pl	/ell Data (D9) ain in Remarks) nes): > 16" nes): > 16" notos, previous inspe	Wetland Hydroloctions), if available:	
Iron De Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca Describe Re Remarks:	ion Visible on Aerial y Vegetated Concav rvations: ter Present? Present? y pillary fringe) ecorded Data (stream	e Surface (B8) /es No /es No /es No n gauge, monit	Gauge or W Other (Expl X Depth (incl X Depth (incl X Depth (incl oring well, aerial pl	/ell Data (D9) ain in Remarks) nes): > 16" nes): > 16"	Wetland Hydroloctions), if available:	
Iron De Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca Describe Re Remarks:	ion Visible on Aerial y Vegetated Concav rvations: ter Present? Present? y pillary fringe) ecorded Data (stream	e Surface (B8) /es No /es No /es No n gauge, monit	Gauge or W Other (Expl X Depth (incl X Depth (incl X Depth (incl oring well, aerial pl	/ell Data (D9) ain in Remarks) nes): > 16" nes): > 16" notos, previous inspe	Wetland Hydroloctions), if available:	

Project/Site:	,	City/Count	y:Tulsa Co	unty	Sampling Date:	10/01/2020
Applicant/Owner: The Oklahoma Department of Transport	ation (OD	OT)	y	State: OK	Sampling Point:	DP 19
Magan Philips-Schaan		Section, To	ownship, Ra		Camping Cont.	
Landform (hillslope, terrace, etc.): floodplain terrace			Local relief	(concave, convex, none):	convex	
Slope (%): Lat: 36.089606		Lona: -95.	.985063	(,	Datum: NAD83	ı
Slope (%): Lat: 36.089606 Soil Map Unit Name: 27 - Kiomatia loamy fine sand, 0 to 1 Are climatic / hydrologic conditions on the site typical for this	percent sl	opes, freq	uently flood	ed NWI classific	ation: PFO1/SS	1A
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Yes	× No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology si				Normal Circumstances" p		< No
Are Vegetation, Soil, or Hydrology na				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map s						eatures, etc.
Hydrophytic Vegetation Present? Yes X No						
Hydric Soil Present? Yes No)_X		he Sampled		🗸	
Wetland Hydrology Present? Yes No	, <u> </u>	with	hin a Wetlar	nd? Yes	No _X	_
Remarks: This point was determined not to be within a wetland du	e to the lac	ck of hydri	c soils and v	wetland hydrology		
This point was determined not to be within a wedand du		or Hydri	c sons and v	wettand frydrology.		
VECETATION Lies esignific names of plants						
VEGETATION – Use scientific names of plants.	Absolute	Dominan	t Indicator	Dominance Test work	choot:	
Tree Stratum (Plot size:)		Species?		Number of Dominant Sp		
Ash-leaf maple (Acer negundo) Green ash (Fraxinus pennsylvanica)		Yes	FAC	That Are OBL, FACW, o		6 (A)
		Yes	FACW	Total Number of Domina	ant	6 (5)
3				Species Across All Stra	ta:	(B)
4. 5.				Percent of Dominant Sp		00 (4/5)
	1 =	= Total Co	ver	That Are OBL, FACW, o	or FAC:	(A/B)
Sapling/Shrub Stratum (Plot size:15')		Yes		Prevalence Index work		
1. Ash-leaf maple (Acer negundo)			FAC	Total % Cover of:		
2				OBL species		
3 4				FAC species		
5			- —	FACU species		
5'	5	= Total Co	ver	UPL species		
Herb Stratum (Plot size:) Crown grass (Paspalum)*	55	Yes	FACW	Column Totals:	(A)	(B)
Sodge (Cyperus en)**	30	Yes	FACW	Prevalence Index	= R/A =	
2. Seage (Cyperus sp.) Heart-leaf peppervine (Ampelopsis cordata)	15	No	FAC	Hydrophytic Vegetation		
Eastern poison ivy (Toxicodendron radicans)	5	No	FAC	1 - Rapid Test for H		tation
5.				X 2 - Dominance Tes	t is >50%	
6.				3 - Prevalence Inde	ex is ≤3.0 ¹	
7				4 - Morphological A data in Remarks	daptations ¹ (Pro	vide supporting
8				Problematic Hydron	-	. '
9					onytic vegetation	(Explain)
10	105			¹ Indicators of hydric soil	and wetland hyd	drology must
Woody Vine Stratum (Plot size:) Grape (Vitis sp.)***		= Total Co	ver	be present, unless distu	irbed or problema	atic.
1. Grape (Vitis sp.)***	5	Yes	FAC	Hydrophytic		
2				Vegetation	s_X_ No_	
Decrease (Include abote control		= Total Co				
Remarks: (Include photo numbers here or on a separate s A positive indication of hydrophytic vegetation was obser Paspalum are listed in the USACE 2018 Regional Wetland	nd Plant Lis	st. 62% ha	ve a FACW	(N=4) or OBL $(N=4)$ indi	cator status ** 3	1 species of

Cyperus are listed in the USACE 2018 Regional Wetland Plant List. 61% have a FACW (N=12) or OBL (N=7) indicator status.***7 species of Vitis are listed in the USACE 2018 Regional Wetland Plant List. 57% have a FAC (N=1), FACW (N=2), or OBL (N=1) indicator status.

	ription: (Describe	to the depth				or confirm	the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	——————————————————————————————————————	Color (moist)	x Features %	_Type ¹ _	Loc ²	Texture	Pemarke
(inches) 0-14	10YR 3/3	_ <u>%</u>	Color (moist)	<u> 70</u>	_ rype	LOC	sandy clay	Remarks
	1011(3/3		<u>-</u>				Saridy Clay	
¹ Type: C=C	oncentration, D=De	pletion, RM=F	Reduced Matrix, M	S=Masked	Sand Gra	ains.	² Location	: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed Ma	trix (S4)		Coast	Prairie Redox (A16)
Histic E	oipedon (A2)		Sandy	Redox (S5))		Dark S	Surface (S7)
Black Histic (A3)				d Matrix (S	,			anganese Masses (F12)
	en Sulfide (A4)			Mucky Min				hallow Dark Surface (TF12)
_	d Layers (A5)			Gleyed Ma			Other ((Explain in Remarks)
_	ick (A10)	(Δ11)		d Matrix (F	,			
Depleted Below Dark Surface (A11) Redox Darl Thick Dark Surface (A12) Depleted D					٠,		3Indicators	of hydrophytic vegetation and
_	Mucky Mineral (S1)		Depression	, ,			d hydrology must be present,	
_ ′	icky Peat or Peat (S3)		Depression	13 (1 0)			disturbed or problematic.
	Layer (if observed						1	
Type:	,	,						
	ches):						Hydric Soil	Present? Yes No _X
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
Primary India	cators (minimum of	one is require	d; check all that a	oply)			Seconda	ary Indicators (minimum of two required)
	Water (A1)			ined Leave	es (B9)			ace Soil Cracks (B6)
_	ater Table (A2)			auna (B13)	, ,			nage Patterns (B10)
Saturation	, ,			itic Plants (Season Water Table (C2)
_	larks (B1)		Hydrogen					yfish Burrows (C8)
	nt Deposits (B2)			Rhizospher		ng Roots		uration Visible on Aerial Imagery (C9)
_	posits (B3)			of Reduce		_		nted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reductio	on in Tilled	d Soils (C6	6) Geo	emorphic Position (D2)
Iron Dep	oosits (B5)		Thin Muck	Surface (0	C7)	,		-Neutral Test (D5)
Inundati	on Visible on Aerial	Imagery (B7)	Gauge or	Well Data	(D9)			
Sparsely	Vegetated Conca	ve Surface (B	B) Other (Ex	olain in Rei	marks)			
Field Obser	vations:							
Surface Wat	er Present?	Yes N	o X Depth (in	ches):		_		
Water Table	Present?	Yes N	o X Depth (in	ches):	> 14"			
Saturation P			o X Depth (in		> 14"	_ Wetl	and Hydrology	y Present? Yes No _X_
	corded Data (stream	m gauge, mon	itoring well, aerial	photos, pre	evious ins	pections),	if available:	
Remarks:								
No positive	indication of wetla	nd hydrology	was observed.					

Project/Site:I-44/US-75 Interchange (Arkansas River)	(City/Counts	r: Tulsa Co	unty	Sampling Date:	10/01/2020
Applicant/Owner: The Oklahoma Department of Transpor	tation (ODC	OT)		State: OK	Sampling Point:	DP 20
Investigator(s): Megan Philips-Schaap		Section, To	ownship. Ra	S25-T19N-R12E		
Landform (hillslope, terrace, etc.): tloodplain terrace				(concave, convex, none):	concave	
Slope (%): 2-5% Lat: 36.090117			985265	(concave, convex, none).	Datum: NAD83	
27 - Kiomatia loamy fine sand, 0 to	1 percent sl	opes, frequ	uently flood	ed NW/ stansific	PFO1/SS	1A
Slope (%): 2-5% Lat: 36.090117 Soil Map Unit Name: 27 - Kiomatia loamy fine sand, 0 to 2 Are climatic / hydrologic conditions on the site typical for this			<u>,</u>	NVVI classific	ation:	
	-				,	
Are Vegetation, Soil, or Hydrology s	-			Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology r			-	eeded, explain any answer	-	naturos oto
SUMMARY OF FINDINGS – Attach site map		Sampin	ig point i	ocations, transects	, important i	eatures, etc.
Hydrophytic Vegetation Present? Yes X N Hydric Soil Present? Yes N		ls th	ne Sampled	Area		
Wetland Hydrology Present? Yes N	0 X		nin a Wetlar		NoX	
Remarks:						
This point was determined not to be within a wetland du	ue to the lad	k of hydric	soils and v	vetland hydrology.		
'		,		, 5,		
VECETATION . Has a significant and a significant						
VEGETATION – Use scientific names of plants.		D				
Tree Stratum (Plot size:)	Absolute % Cover	Species?	Indicator Status	Dominance Test work		
Eastern cottonwood (Populus deltoides)	10	Yes	FAC	Number of Dominant Sp That Are OBL, FACW, of		8 (A)
2. Slippery elm (Ulmus rubra)	10	Yes	FAC	Total Number of Demin		
3				Total Number of Domini Species Across All Stra		l1(B)
4				Percent of Dominant Sp	ooioo	
5				That Are OBL, FACW, of		3% (A/B)
Sanling/Shruh Stratum (Plat size: 15'		= Total Co	ver	Prevalence Index work	reheat:	
Sapling/Shrub Stratum (Plot size:) Green ash (Fraxinus pennsylvanica)	25	Yes	FACW	Total % Cover of:		alv bv
2. Slippery elm (Ulmus rubra)	10	Yes	FAC	OBL species		
3.				FACW species		
4.				FAC species		
5				FACU species	x 4 =	
5'	35	= Total Co	ver	UPL species	x 5 =	
Herb Stratum (Plot size:)	40	Voc	EAC\A/	Column Totals:	(A)	(B)
1. Wood-oats (Chasmanthium sp.)* Johnson grass (Sorghum halepense)	$-\frac{10}{10}$	Yes Yes	FACW FACU	Dravelenes Index	- D/A -	
Great ragweed (Ambrosia trifida)	10 - 5	Yes	FAC	Prevalence Index Hydrophytic Vegetation		
Late-flowering thoroughwort (Eupatorium serotinum)		Yes	FAC	1 - Rapid Test for H		tation
5. Eastern poison ivy (Toxicodendron radicans)		Yes	FAC	× 2 - Dominance Tes		tation
Canadian goldenrod (Solidago canadensis)	5	Yes	FACU	3 - Prevalence Inde		
7. Prairie fleabane (Erigeron strigosus)	5	Yes	FACU	4 - Morphological A		vide supporting
8.				data in Remarks	or on a separat	e sheet)
9.				Problematic Hydror	hytic Vegetation	¹ (Explain)
10				1		
	15	= Total Co	ver	¹ Indicators of hydric soil be present, unless distu		
Woody Vine Stratum (Plot size:) None observed				be present, amess dista	indea of problems	atro.
1				Hydrophytic		
2				Vegetation Present? Yes	s_X_ No_	
Remarks: (Include photo numbers here or on a separate		= Total Co	ver			
A positive indication of hydrophytic vegetation was obse	,	6 of domin	ant species	indexed as OBL_FACW	or FAC)	
* 3 species of Chasmanthium are listed in the USACE 2						

Depth (inches)	Matrix Color (moist)	 %	Redox Features Color (moist) % Type ¹	_Loc ² _	Texture	Remarks
0-4	10YR 4/3	100	Ocidi (moist) 70 Type		sandy clay	Remarks
4-14	10YR 3/2				sandy clay	tiny rocks, small, white and black
	1011(0/2				Sarray Olay	bright orange depletions, 15%
Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS=Masked Sand Gra	ains.	² Location	PL=Pore Lining, M=Matrix.
Hydric Soil						for Problematic Hydric Soils³:
Histosol	(A1)		Sandy Gleyed Matrix (S4)		Coast	Prairie Redox (A16)
	pipedon (A2)		Sandy Redox (S5)		_	urface (S7)
Black Hi	, ,		Stripped Matrix (S6)		_	anganese Masses (F12)
	n Sulfide (A4)		Loamy Mucky Mineral (F1)			hallow Dark Surface (TF12)
	d Layers (A5)		Loamy Gleyed Matrix (F2)		Other (Explain in Remarks)
_	ick (A10) d Below Dark Surfac	o (Δ11)	Depleted Matrix (F3)Redox Dark Surface (F6)			
	ark Surface (A12)	e (A11)	Depleted Dark Surface (F7))	3Indicators	of hydrophytic vegetation and
	lucky Mineral (S1)		Redox Depressions (F8)	,		i hydrology must be present,
	ıcky Peat or Peat (S	3)	,			disturbed or problematic.
Restrictive I	_ayer (if observed)					
Туре:					I lordeia Cail	Present? Yes No _X
Donath Co.	ches):				Hydric Soil	Present? Yes No _X
Depth (inc						
Remarks: No positive	indication of hydric isturbed. No layers.		oserved.			
Remarks: No positive Soils very d	indication of hydric isturbed. No layers.		bserved.			
Remarks: No positive Soils very d	indication of hydric isturbed. No layers.		oserved,			
Remarks: No positive Soils very d	indication of hydric isturbed. No layers. GY drology Indicators:				Canada	
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary India	indication of hydric isturbed. No layers. GY drology Indicators: cators (minimum of c		ed; check all that apply)			ry Indicators (minimum of two required
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface	indication of hydric isturbed. No layers. GY drology Indicators: cators (minimum of c		ed; check all that apply) Water-Stained Leaves (B9)		Surf	ace Soil Cracks (B6)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa	indication of hydric isturbed. No layers. GY drology Indicators: cators (minimum of company) water (A1) iter Table (A2)		ed; check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13)		Surf	ace Soil Cracks (B6) nage Patterns (B10)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary India Surface High Wa Saturation	GY drology Indicators: cators (minimum of of Water (A1) atter Table (A2) on (A3)		ed; check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14)		Surf Drai Dry-	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M	GY drology Indicators: cators (minimum of of Water (A1) tter Table (A2) on (A3) larks (B1)		ed: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1)	ing Poets (C	Surfi Drail Dry- Cray	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary India Surface High Wa Saturatio Water M Sedimer	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2)		ed: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv		Surf Drai Dry Cray	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		ed; check all that apply) — Water-Stained Leaves (B9) — Aquatic Fauna (B13) — True Aquatic Plants (B14) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres on Liv — Presence of Reduced Iron (C4	4)	Surfa Drai Cray Cray Satu Stur	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	GY drology Indicators: cators (minimum of composits (B2) posits (B3) at or Crust (B4)		ed: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv Presence of Reduced Iron (C4 Recent Iron Reduction in Tille	4)	Surfi Drai Cray Cray Satu Sturn Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
Remarks: No positive Soils very d YPDROLO Wetland Hyd Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma	GY drology Indicators: cators (minimum of company) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	one is requir	ed: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Thin Muck Surface (C7)	4)	Surfi Drai Cray Cray Satu Sturn Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	GY drology Indicators: cators (minimum of company) arter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial	one is requir	ed: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Thin Muck Surface (C7) Gauge or Well Data (D9)	4)	Surfi Drai Cray Cray Satu Sturn Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	GY drology Indicators: cators (minimum of of the cators (minimum of of of the cators (minimum of of of the cators (minimum of	one is requir	ed: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tiller Thin Muck Surface (C7) Gauge or Well Data (D9)	4)	Surfi Drai Cray Cray Satu Sturn Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely	GY drology Indicators: cators (minimum of of the cators (minimum of of of the cators (minimum of of of the cators (minimum of	one is requir Imagery (B7 e Surface (E	ed: check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv Presence of Reduced Iron (C4 Recent Iron Reduction in Tiller Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)	4)	Surfi Drai Cray Cray Satu Sturn Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observation	indication of hydric isturbed. No layers. GY drology Indicators: cators (minimum of of the cators (minimum of of of the cators (minimum of of of the cators (minimum of	one is requir	ed; check all that apply) — Water-Stained Leaves (B9) — Aquatic Fauna (B13) — True Aquatic Plants (B14) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres on Liv — Presence of Reduced Iron (C4) — Recent Iron Reduction in Tiller — Thin Muck Surface (C7) Gauge or Well Data (D9) 88) — Other (Explain in Remarks)	4)	Surfi Drai Cray Cray Satu Sturn Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
Remarks: No positive Soils very d IYDROLO Wetland Hyde Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Field Obsert Surface Water	indication of hydric isturbed. No layers. GY drology Indicators: cators (minimum of company) atter (A1) atter Table (A2) on (A3) arks (B1) att Deposits (B2) osits (B3) attor Crust (B4) osits (B5) on Visible on Aerial of Vegetated Concave vations: er Present? Y	one is requir	ed; check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv Presence of Reduced Iron (C4 Recent Iron Reduction in Tiller Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) OX Depth (inches): 10 11 Water-Stained Leaves (B9) Depth (inches): 12 14 15 16 26 27 28 29 20 20 21 21 21 21 21 21 21 21	4) d Soils (C6)	Surfi Drai Cray Satu Sturn FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: No positive Soils very d IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Field Obsert Surface Water Water Table Saturation Pe (includes cap	indication of hydric isturbed. No layers. GY drology Indicators: cators (minimum of company) atter (A1) atter Table (A2) and (A3) arks (B1) atter Table (B2) atter (B4) atter (B4) atter (B4) atter (B5) atter (B5) atter (B5) atter (B5) atter (B6) atter (B7) atter	one is requir Imagery (B7 e Surface (E 'es N	ed; check all that apply) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Liv Presence of Reduced Iron (C4 Recent Iron Reduction in Tiller Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) O X Depth (inches): Depth (i	4) d Soils (C6) Wetlar	Surfi Drai Cray Satu Sturn FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
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Project/Site:I-44/US-75 Interchange (Arkansas River)	,	City/County	. Tulsa Co	unty	Sampling Date	10/1/2020
Applicant/Owner: The Oklahoma Department of Trans	portation (ODC	OT)		()K	Sampling Poin	()B 21
Investigator(s): Megan Philips-Schaap		Section To	wnshin Ra	nge:	ouripining i on	
Landform (hillslope, terrace, etc.): tloodplain terrace				(concave, convex, none):	none	
Slope (%): 0% Lat: 36.090397				(concave, convex, none).		33
Soil Map Unit Name: 27 - Kiomatia loamy fine sand, 0	to 1 percent sl	opes, frequ	ently flood	ed NW/ classific	R2USC	
Are climatic / hydrologic conditions on the site typical for						
				'Normal Circumstances" p		X No
Are Vegetation, Soil, or Hydrology						
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site ma			,	eeded, explain any answe	,	
Hydrophytic Vegetation Present? Yes		<u> </u>	3 1	,	,	
Hydric Soil Present? Yes		ls th	e Sampled	Area		
Wetland Hydrology Present? Yes		with	in a Wetlaı	nd? Yes	No <u>×</u>	
Remarks:						
Hydrophytic vegetation and hydrology were not obsever the second of the		e field inve	stigation. S	Soils were not excavated	at this observa	ation point.
30'	Absolute	Dominant	Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size:) **Slippery elm (Ulmus rubra)	<u>% Cover</u> 5	Species? Yes	Status FAC	Number of Dominant Sp		2 (A)
1. <u></u>				That Are OBL, FACW, o	or FAC:	(A)
3				Total Number of Domin Species Across All Stra		4 (B)
4				Percent of Dominant Sp	pecies	500/
5				That Are OBL, FACW, o		50% (A/B)
Sapling/Shrub Stratum (Plot size: 15')		= Total Cov	er er	Prevalence Index wor	ksheet:	
1. Slippery elm (Ulmus rubra)	15	Yes	FAC	Total % Cover of:	Mult	iply by:
2				OBL species	x 1 = _	
3				FACW species	x 2 =	
4				FAC species	x 3 =	
5				FACU species		
Harb Stratum (Diatoine) 5'	15	= Total Cov	er er		x 5 =	
Herb Stratum (Plot size:) Johnson grass (Sorghum halepense)	45	Yes	FACU	Column Totals:	(A)	(B)
Coastal sandbur (Cenchrus spinifex)*	30	Yes	UPL	Prevalence Index	= B/A =	
Bahia grass (Paspalum notatum)		No	FACU	Hydrophytic Vegetation		
4				1 - Rapid Test for H	Hydrophytic Veç	getation
5.				2 - Dominance Tes	t is >50%	
6				3 - Prevalence Inde	ex is ≤3.0 ¹	
7				4 - Morphological A data in Remarks	daptations ¹ (Pr	rovide supporting
8				Problematic Hydron		· · ·
9				Problematic Hydron	Jilylic vegetatio	on (Explain)
10				¹ Indicators of hydric soil	l and wetland h	vdrology must
Woody Vine Stratum (Plot size:)		= Total Cov	er/er	be present, unless distu		
None observed 1.				Hudus abotis		
2.				Hydrophytic Vegetation		
		= Total Cov	/er	Present? Yes	s No	_ <u>×</u>
Remarks: (Include photo numbers here or on a separa				1		
No positive indication of hydrophytic vegetation was	observed (≥50	% of domin	nant specie	es indexed as FAC- or dr	ier).	
	,		•		,	

Sampling Point: OB 21

	1atrix	Redox Features		<u>.</u>
nches) Color (m	oist) %_	Color (moist) % Type ¹	Loc ² Texture	Remarks
				_
		Soils were not tested		
		at this observation		
		_		-
		point.		_
	D=Depletion, F	RM=Reduced Matrix, MS=Masked Sand Gr		on: PL=Pore Lining, M=Matrix.
ydric Soil Indicators:			Indicato	rs for Problematic Hydric Soils ³ :
_ Histosol (A1)		Sandy Gleyed Matrix (S4)	Coas	st Prairie Redox (A16)
_ Histic Epipedon (A2)		Sandy Redox (S5)	Dark	Surface (S7)
_ Black Histic (A3)		Stripped Matrix (S6)	Iron-	Manganese Masses (F12)
_ Hydrogen Sulfide (A4		Loamy Mucky Mineral (F1)	Very	Shallow Dark Surface (TF12)
_ Stratified Layers (A5)		Loamy Gleyed Matrix (F2)	Othe	er (Explain in Remarks)
_ 2 cm Muck (A10)		Depleted Matrix (F3)		
_ Depleted Below Dark	, ,			
_ Thick Dark Surface (A	,	Depleted Dark Surface (F7)		ors of hydrophytic vegetation and
_ Sandy Mucky Minera		Redox Depressions (F8)		and hydrology must be present,
_ 5 cm Mucky Peat or F			unle	ss disturbed or problematic.
estrictive Layer (if obs	erved):			
Туре:			Uludaia Ca	il Dunnant? Van Na
Depth (inches):			Hydric Sc	oil Present? Yes No
emarks:	d at this observ	vation point.		
emarks:	d at this observ	vation point.		
emarks: oils were not excavated	d at this observ	vation point.		
emarks: oils were not excavated		vation point.		
emarks: oils were not excavated DROLOGY etland Hydrology Indic	cators:	vation point.	Secon	dary Indicators (minimum of two require
emarks: oils were not excavated DROLOGY etland Hydrology Indic	cators:			dary Indicators (minimum of two require
emarks: oils were not excavated DROLOGY etland Hydrology Indicitimary Indicators (minim _ Surface Water (A1)	cators: um of one is re	equired; check all that apply) Water-Stained Leaves (B9)	S	urface Soil Cracks (B6)
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